American Journal of

PUBLIC HEALTH

and The Nation's Health

The 84th Annual Meeting
Convention Hall
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November 12–16

NOVEMBER, 1956

volume 46

number 11

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American Journal of

PUBLIC HEALTH

and the Nation's Health

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Volume 46 | November, 1956 | Number 11

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1. Livingston, S., and Petersen, D.: New England J. Med. *254*:327 (Feb. 16) 1956.
2. Pence, L. M.: Texas State J. Med. *50*:290 (May) 1954.
3. Berman, B. A.: Am. J. Psychiat. *112*:541 (Jan.) 1956.

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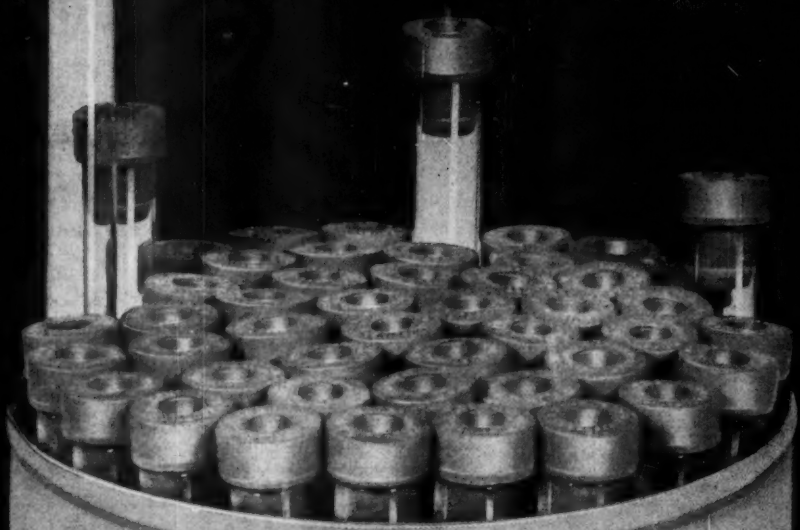

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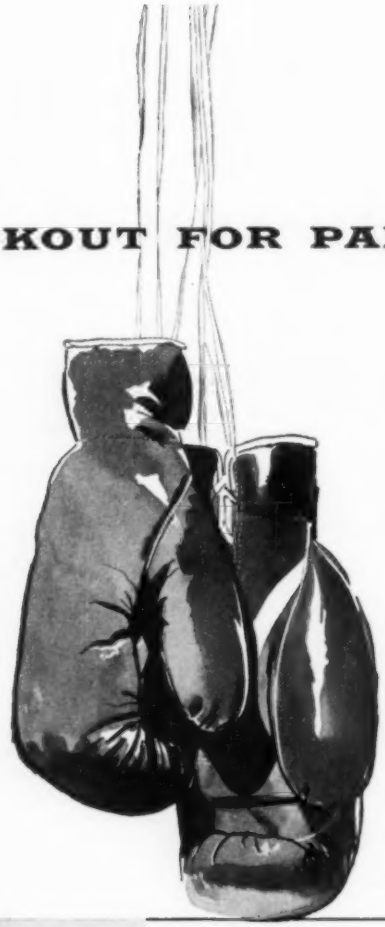

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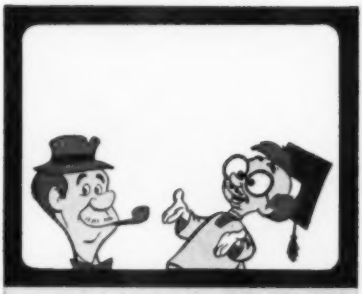

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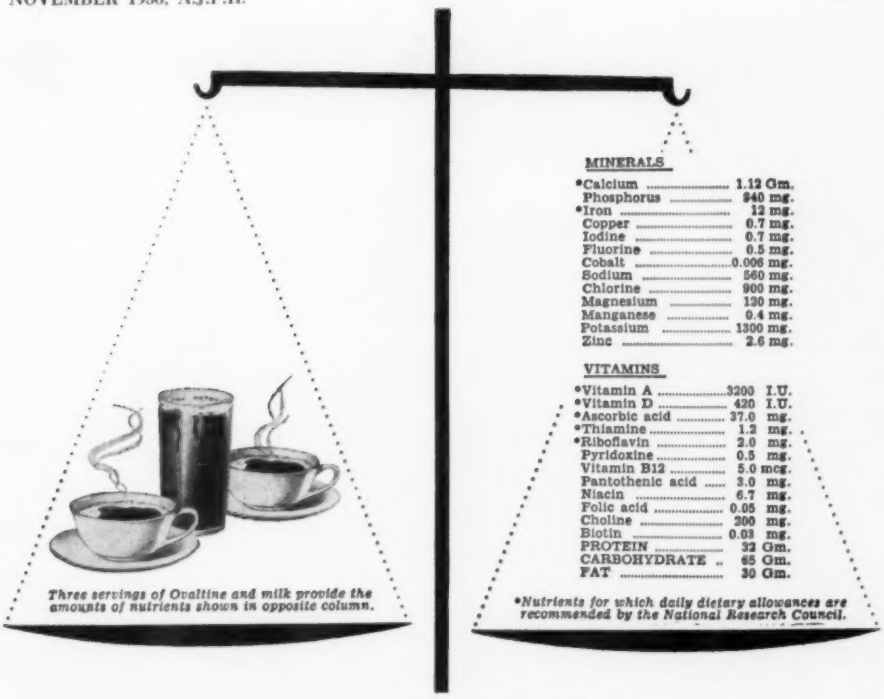

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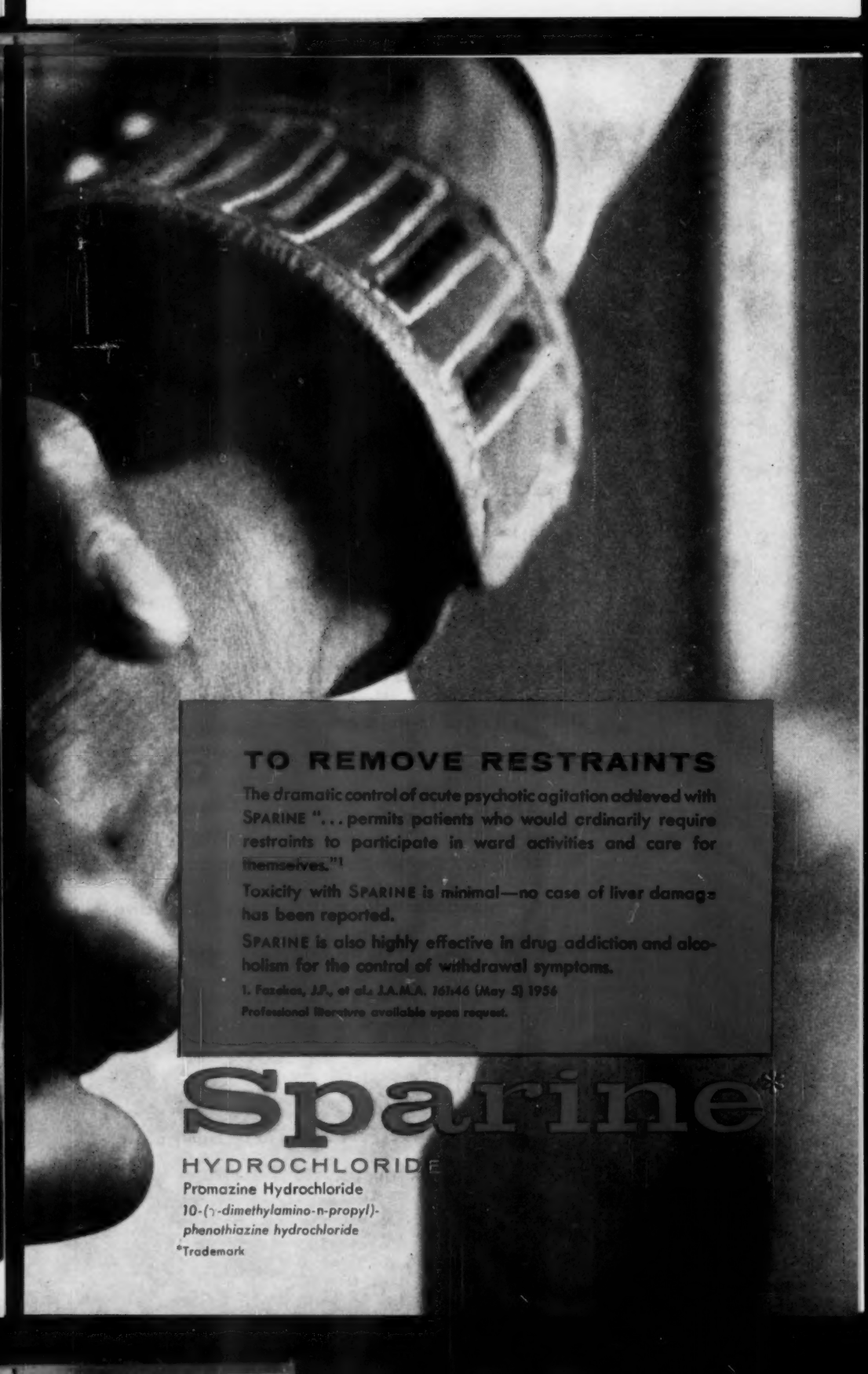

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1. Fazekas, J.F., et al.: J.A.M.A. 161:46 (May 5) 1956

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1. Goodman, L., and Gilman, A.: Pharmacological Basis of Therapeutics, New York, Macmillan, 1955, p. 1153. 2. Brown, H. W., *et al.*: J.A.M.A. *161*:515 (June) 1956. 3. Hoekenga, M. T.: World M. J. *3*: (Sept.) 1956.

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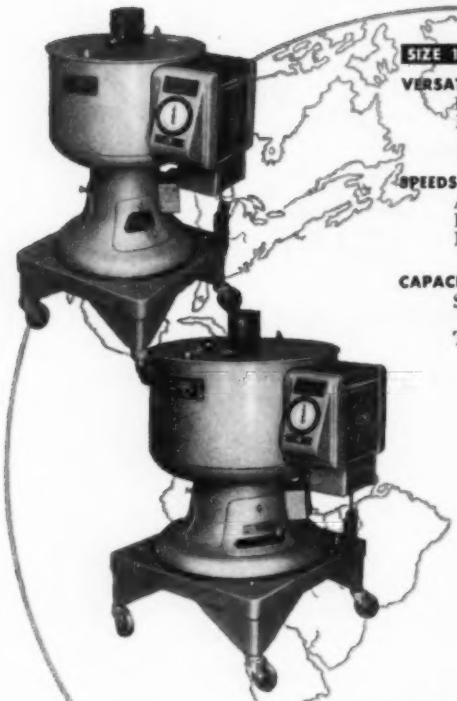

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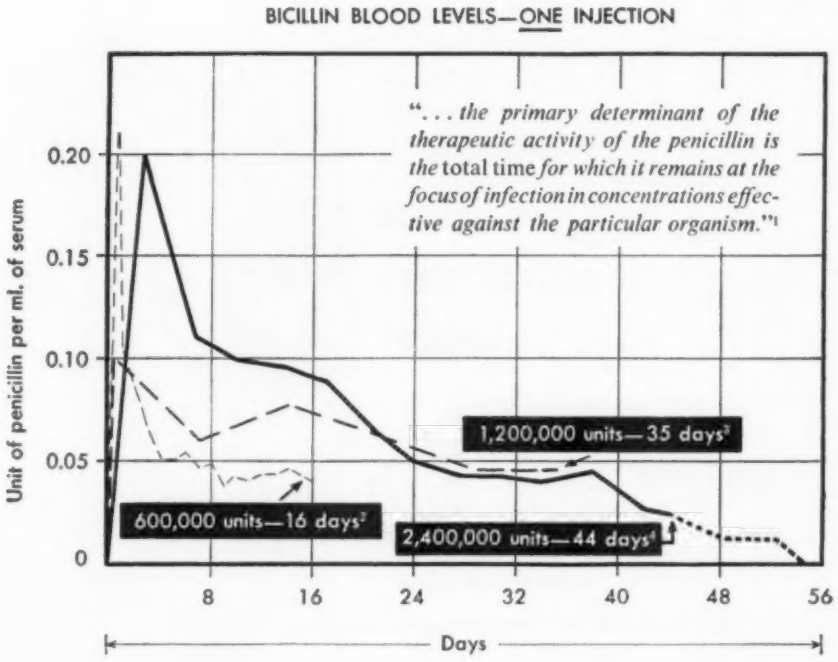

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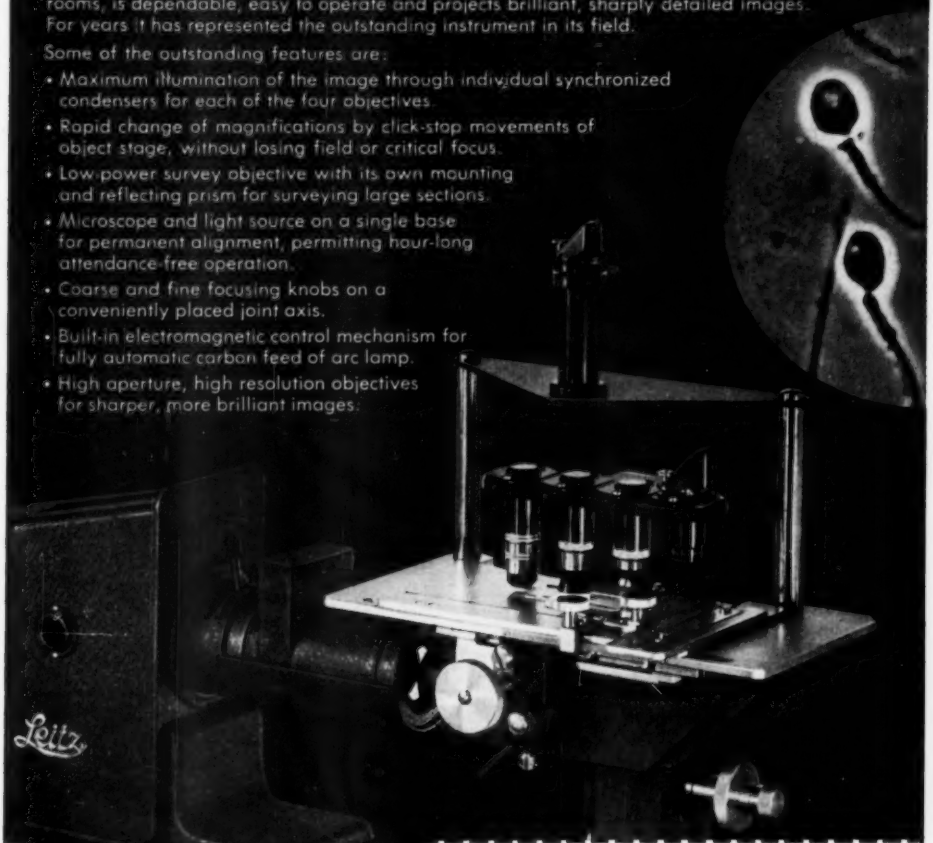

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Public Health Goals

IRA V. HISCOCK, Sc.D., F.A.P.H.A.

The President of the Association presents a thoughtful review in this eighty-fifth year of the American Public Health Association.

Toward New Frontiers

Goals for better "health" are being dramatized, publicized, and scrutinized. They are of vital concern to the American Public Health Association, which must be a partner in the foreground of decisive action.

Contributions to progress depend upon practice in step with accumulating knowledge, alertness to recognize opportunity, judgment to match attitudes and interest, wisdom to cope with responsibility, and imagination to advance constructive research. In a "small" world where disease and poverty recognize no frontiers, health is basic for peace and prosperity. The time is ripe to reduce vagueness, to remove barriers of manpower shortage, to show common sense in trying new things,[1] and to convince all concerned that "gold that buys health can never be ill spent." [2]

Fifteen years from now will be celebrated the centennial anniversary of our representative public health organization, nearly comparable in size to the Royal Society of Health. Before then, a goal of inspiring and wise leadership and of stimulating cooperative effort can be realized.[3] In the process, as suggested by our first President, Stephen Smith, when speaking 35 years ago at the semicentennial meeting:

> "Let us apply ourselves to the task with renewed vigor, and thus enable those who will greet the centennial anniversary of this association to hear from sanitary officials the good news that the death rate of the year 1971 is limited to those afflicted with old age, or to disease or accidents unpreventable and incurable by any agencies known to science."

Yesterday in Public Health

The life of the APHA has run parallel with many developments in public health. It is encouraging to compare the state of the art and science of public health as revealed in the meetings

Professor Hiscock is chairman, Department of Public Health, Yale University, New Haven, Conn.

Presidential address presented at the First General Session of the American Public Health Association at the Eighty-Fourth Annual Meeting in Atlantic City, N. J., November 13, 1956.

and published papers and reports, following the farsighted contributions of Chadwick,[4] Simon and Shattuck,[5] and guided by such leaders as Smith, Sedgwick, Biggs, Chapin, Conn, Newsholme, Newman, and their living students and successors[6] whose names bring luster to the rosters of the APHA.

Some sense of impending epochal events in man's battle against disease guided Dr. Stephen Smith and his friends in New York City—eight other physicians and an architect—when they drew up plans for what became, on April 18, 1872, The American Public Health Association. The Association grew, as public health advanced, to 500 members by 1890 when it was rated as "the largest and most influential organization in the world" in shaping public health opinions. The popularly written APHA story indicates that physicians, engineers, biologists, and others saw public health as an applied science cutting across the various disciplines and forging studies, findings, techniques of many specialists into effective weapons for fighting disease and building health.

The physician continued to be a key person in the public health campaign as he served the family and began to share in community developments. In 1913, for example, the American Medical Association, through its Council on Health and Public Instruction, employed Dr. Charles V. Chapin to visit and report on health affairs in the several states. That Council also called a conference of 39 health agencies to consider interests with special reference to a comprehensive and coordinated health program—a subject reviewed later in 1915 by the APHA. Even with broadened concepts, and additions of numerous types of professional workers, nearly a third of the total membership of the APHA possess the M.D. degree, including a higher proportion among the 3,500 in the Epidemiology, the Medical Care, and the Health Officers Sections.

Spectacular progress in public health was due to discoveries by people who have also devised new techniques, while obtaining knowledge of the nature of infection, its mode of transference, and control measures. Millions derive benefit without thinking of persons and developments of yesterday concerning the story of insulin, vitamins, of antibiotics, of x-ray diagnosis, and treatment; or of advances in surgery of the brain, the heart, and the lungs; or of environmental sanitation and safety.

Rarely can a professional society, as such, claim direct credit for specific advances, or will it desire to do so. Yet clear is the value of an organization which helps people to exchange ideas, to explore theories, to share successes and failures, to gain from their friends the inspiration and the glimmers of light which can open new vistas for future work. This has been a basic role of the APHA, which meanwhile added functions, increased the services to members, their Sections and Affiliated Societies and Branches, and supported the work of Committees on Administrative Practice, Professional Education, Research and Standards, besides more recently the Committees on Child Health, on Housing, and on Nutrition. Often we have stood at the crossroads of public health[7] and have evaluated the situation and pressed forward. For over a generation, foundations and philanthropic institutions carried on experimental work in public health administration, in the training of personnel, and the development of proving grounds for teaching principles and methods in health practices. Passage of the Social Security Act after the depression following the First World War, and extensive studies by the APHA, the U. S. Public Health Service, and the Rockefeller Foundation, among others, presented the public health pro-

fession with an opportunity to establish more constructive programs of health services across the country. Attention was given to the influences of such interrelated factors as:

1. the crisis in teaching that came to a head through the pressure of population changes since the Second World War;
2. the economic trend of the country toward a highly industrialized and urbanized society;
3. the political trend toward direct and centralized government;
4. the social trend which concerns especially our children and our aging population;
5. the increasing attention being given to the physical, mental, spiritual, and economic well-being of the men and women who run business, industry, and government.

Plans were formulated for Local Health Units for the Nation, for extending appraisals and health indexes, and for popularizing the concept of the so-called Basic Six—now out of date and outdistanced in so many localities, just as are books which carry my name on "Community Health Organization" and "Ways to Community Health Education."

Today in Public Health

We are meeting in our 85th year on the threshold of an open door of continuing and accelerated progress. Our neighbor's health is our business. There is no greater concern to millions of people in the United States and Canada than the state of their health. The ordinary American is still relatively free, still better fed, better clothed, and better housed than the common man in any other country. Behind this peak of public interest in the health of the people there is a high level of health, a high birth rate, a low incidence of communicable diseases and low infant mortality.

Were the late Joseph Mountin with us, doubtless he would remind us in a timely manner that "From time to time, the public health profession, and particularly the health department finds it necessary to re-define its field—because many of the old problems have been resolved and because new opportunities for advancing human health are opening up constantly—the content and scope of health services, like society itself, undergo constant changes. As old problems are solved or fade into minor significance, new ones, or those unappreciated in the past, arise to take their place." [8]

Today, the growth and movement of population add to the complexity and multiplicity of problems of public health, with a future expectation of 200 million in the United States. In great unserved areas, some 40 million people live, while others are not served too satisfactorily in additional geographical areas of this country. Where does responsibility rest, and what are the best administrative plans to follow? Furthermore, we cannot close our eyes to the impact of other changes. Close to a third of the nation's families changed addresses in a recent three-year period; 10 million families moved to another state; there is a tendency toward early marriage; there is an increase in people's leisure time without recreation; thousands of women confront a prospect of eight to nine years of widowhood; urbanization is accompanied by a lessening of effective relationships among individuals and a decrease in the effectiveness of channels of communications; population growth has outstripped the increase in professional public health workers. There is a dearth of physicians, engineers, nurses, and others engaged in public health in the face of an increased demand, especially a shortage of talents and skills adaptable to specific functional and geographic areas of service.

Research often holds the key to the solution of critical problems. Constructive studies have been carried on in the halls of schools of medicine and of public health and in the institutes of

public health of the government and elsewhere. Application of results by practicing physicians has influenced the course of events in prevention and therapy; but equal attention has not been given to what might be termed administrative research and simultaneous application to public health practices. A midcentury survey of medical research presents modern medicine in its relation to fundamental research in laboratories of biology, chemistry, physics; atomic energy with its radioactive isotopes serving medicine in diagnosis and (hopefully) in therapy.[9]

There is much yet unknown regarding cancer, hypertension, rheumatic syndromes, tuberculosis, mental illness, and even alcoholism. There are administrative problems of distributing medical care, and there are economic problems of paying for it. The solution is not within the purview of one professional group alone, but rather to be forged from the give and take effort of labor, management, politics, professions, and other people—and that same testing and "pulling" increasingly may help in other developments. Leaders in medical education and in public health and medical practice stress their belief that these economic and social problems can be permanently solved only as they are related to solution of the even more challenging problem of extending and improving medical and graduate public health education, with consequent progressive improvement in the quality and quantity of available services and research as related to the health of the people. In public health, much depends on the breadth of vision and depth of knowledge and understanding of top administrators, and upon those immediately in charge of functional activities, and upon the "little" and the big "researcher." To use wisely the advances in education and research, the physician, the dentist, the engineer, the nurse, and the health administrator must keep pace in growth with the art and the science, while also keeping the family and the pastor as communicating members of the team.

Tomorrow in Public Health

We need more light on many issues. To forecast the future is hazardous. We need to continue to fight the enemies that cause unnecessary disease and accidents whether they occur on the highway, in the home or in the work place. Preventive medicine will be incorporated in clinical medicine more fully; the general practitioner of medicine will play an increasing role; and more attention will be given to the mutual interests and joint responsibilities of the church, the home, the school, the workplace, and the professions. Perhaps most of all we cherish the hope for more and better prepared personnel and for improved practices and methods for measuring results. Here the APHA stake is clear, but the tools are scarce.

Among some of the untilled and only partially tilled fields, we may find reason to adjust our goals and procedures, as illustrated in the following list:

1. Plans to be developed for better health administration,[10] business management, and community organization
2. Increased support of activities to recruit and prepare urgently needed health personnel[11]
3. Schemes to be formulated for meeting the growing problems of chronic illness and rehabilitation among all age groups
4. Barriers to be removed to insure more effective programs for mental health and for health education of the public[12]
5. More constructive provisions for health among employees and students in schools, colleges, and industries, where health instruction is so often lacking or at most poorly done
6. More extensive and realistic provisions for civil defense and for meeting hazards of disaster and of radioactive substances
7. Increased research on numerous unsolved problems, including both so-called basic research and administrative research
8. Better evaluation methods for measuring

the levels of health and the results of programs of public health and preventive medicine [13]

9. Improved measures for mutual assistance and exchange of ideas and results of experiences relating to public health between the various parts of the world.

Tomorrow in the APHA

Committee Interests

The Fellows and members of the American Public Health Association are faced with a task of large proportions in meeting their responsibilities as citizens interested and participating in public health and in helping the Association to fulfill the obligations for which it was founded. Affiliated Societies and Branches are high on the priority list of opportunities for attention. Over 20,000 persons are involved in 36 Affiliated Societies. A special committee has been working ably with the Executive Board and staff to explore methods of strengthening the Affiliated Societies and developing future plans for wider participation of all concerned.

Our Committee on Administrative Practice regards the provision of leadership in evaluation as a continuing responsiblity. During the coming years cooperative efforts must be encouraged and increased.* Of high priority is participation in the development of the public health aspects of the care of long-term illness, including preventive measures. There are many complex administrative problems and details of relationship with other groups which have a bearing on public health practices. Working closely with the Section on Mental Health, consideration must be given to necessary machinery and to administrative affairs in the behavioral sciences in order to develop effective administrative practices. Integrated home care programs, including combined public health nursing services, must be given attention while stressing quality.

The reports of the Committee on Research and Standards published in the Journal, and others in progress, cover a wide and deep range of interest and expression of responsibility, and are in keeping with subjects listed above. There is concern also for the part which the laboratory will play in research and in the development of standards in public health services of tomorrow.

The Committee on Professional Education is challenged by strategic concepts of the place of the public health specialties in the future pattern, with adjustment of educational programs to prepare for a changing situation. The opportunity for cooperation between this committee and the Association of Schools of Public Health extends beyond the accreditation process. Has enough thinking been done, for example, about the place and preparation for public health nursing, for occupational health, and for other professional specialties? Perhaps there are cooperative opportunities for the APHA committees and the Schools of Public Health to work with employing groups and others concerned on the ever-growing need for more practical preparation in order that programs, such as mental health, accident prevention and aging, for example, may receive the time and skillful attention deserved. More specifically, it is desired to see how much can be accomplished in order to:

1. assist in defining future patterns for education and practice in public health;
2. develop plans for more effective recruitment of public health personnel, in cooperation with other appropriate bodies;
3. cooperate with schools of public health

* As, for example, with the Schools of Public Health, the State and Territorial Health Authorities, the U. S. Department of Health, Education, and Welfare, the American Dental Association, the American Hospital Association, the American Medical Association, the American Nurses' Association, the American Academy of Pediatrics, the American Public Welfare Association, and the National Health Council.

in correlating problems of education and practice, including assistance in further development of programs of field training and in-service education;

4. encourage schools of public health and field training agencies to emphasize more fully the team concept in educational programs;

5. stimulate more educational and administrative research by schools of public health and assist in measures to make increased research possible;

6. Study needs and develop plans for preparation of so-called ancillary public health personnel;

7. develop greater liaison with educational agencies in fields related to public health.

The Committee on Child Health has already done an impressive job in bringing together material for educational and informative guides dealing with preventive aspects of maternal and child health. The committee may apply this coordinating ability to some aspects of research. This committee has illustrated the value of cooperative enterprises between agencies.

Considerable impetus has been given to research by the Health Research Facilities Act which authorizes the appropriation of funds to be used to provide for additional research facilities and for a National Advisory Council. Some stimulus was also given to graduate preparation through the provision of federal funds for fellowships. The need is great for increased building and able faculty resources, along with the stepped-up research possibilities. Meanwhile, increased efforts are needed to provide more adequately for research in public health practices interpreted broadly, which may be more nearly comparable with the unusual research developments in other medical fields which have advanced clinical practices so effectively in recent years.

Membership and Finances

The American Public Health Association has a policy of serving as a technical and professional body, composed largely of directors of health and other workers in the official and voluntary health field. All personnel throughout North America engaged in public health are potential candidates for membership in the APHA. What can be done also for their administrative heads, the mayors, the governors, the board members, and others, upon whose interest and judgment on personnel, purse strings, and program so much of the success of the health organization depends?

Another vital question for the future of the APHA is the financial basis. In 1919, a minimum income of $50,000 appeared reasonable as an annual budget on which to operate. Actually, it was nearly $34,000, representing an increase of nearly $12,000 over the preceding year. Intensive promotion presents some difficulties. The slow growth is more likely to be stable, and enables us to say that 94 per cent of the membership renews annually.

We have an unusually industrious and loyal staff, and are pleased to acknowledge with appreciation the 35 years of service of Mrs. Walsh, the 21 years of Dr. Atwater, and the ten years of Mr. Elder. We must begin promptly, as a matter of urgency, plans for additional able staff members to help carry the increasing load, and the burdens ahead which are near our doorstep. We must make vigorous efforts to increase materially the operating budget to provide for meeting more adequately the tasks before us and for undertaking a more comprehensive program under the kind of dynamic leadership which is expected of us and which we are all eager to help move forward. Meanwhile, we have little reason for discouragement, as we consider a Journal circulation of 15,907 in January, 1956, as compared with 5,314 in 1935; a tripled membership and an income of $590,000 in 1955.

This Annual Meeting is a working conference concerned with hundreds of

aspects of our growing and changing public health program. Last month, a Task Force of our colleagues in the APHA met for three days to consider the future opportunities of our Association in the light of many questions. Constructive proposals for the attention of the Executive Board and the Governing Council resulted. These have to do with the content and organization of a program through which the APHA can expand its leadership and service functions in meeting the newer public health needs. They have to do with plans for a stronger financial structure as the means for supporting such a program on a more adequate and continuing basis. They have to do with involving the entire membership of the Association more fully in the discussions and development of activities and services. We hope and believe that you will be gratified with the evolving plans and eager to participate in the next steps. We are fortunate to be living in this period of an up-swinging curve of interest, demand and effectiveness in public health unparalleled in history.

"Let us rise up and build! So they strengthened their hands for this good work." Nehemiah 2.

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The Future Health Officer's Responsibility: Past, Present, and Future

ALAN GREGG, M.D.

The new ecological approach to public health is here presented with an illuminating historical background.

My faith in the value of comparison, whether as a device for exposition or as a stimulus to reflection, sustains me in this task that is perhaps well beyond my capacity, but nonetheless I believe worth the effort of attempting. My title "Past, Present, and Future" serves well to suggest three states of activity, each comparable with the other—though in some ways the comparison seems arbitrary when we remember how subtly the past informs and influences the present, and how inevitably and undeniably the present partakes of the past and will be found making up and governing the future. Though this talk be a mere sketch in point of the time consumed in presenting it, I feel almost apologetic for the breadth of its generalities and a little on the defensive for grouping decades and even centuries into what will be summarily referred to as periods.

I want to compare three periods of thought and activity, just as we often are wont to compare, without too much confusion, past, present, and future. These periods will refer to the Middle Ages and their universities as the past; to the last two hundred years, say from 1760 to 1960, with their institutes and laboratories, as the present; and a period that I think is beginning to dawn and therefore can reasonably enough be called the future.

Let us bring to the consideration of these periods the assumption that as broad a phenomenon as human association presents the common factor in our comparisons. A very powerful factor it is too, even though it seems inclusive and general to the point of vagueness. Actually, I suspect that human association has always been so intimate and essential a factor in the spread and growth of knowledge that we have come to overlook its presence and undervalue its importance.

Human association may quite naturally seem a superfluous consideration to an audience assembled in annual convention. Only the realization of the inherent and inveterate human appeal of getting together, of contact and association, will explain the inextinguishable drive that has made possible the survival of learning and the later spread of knowledge in Europe and the Americas over the past thousand years. And I do not doubt that the social nature of man may be assumed to be the most dependable constant in the future growth and spread of knowledge. Will Rogers used to say that the average American is willing to join anything but his family. In any event, human association and the sure pleasures and rewards it brings are at the root of many and perhaps most of our institutions—especially institutions for, and of, young persons. We must not be too much influenced by the fact that one of the main services of that institution known as a university in the years roughly from 1100 to 1400 A.D. was

the protection it gave to the civil and human rights of young foreign students in university cities like Bologna and Paris, where the protection given by the university allowed foreign students to enjoy many of the rights of a citizenship they could not otherwise claim. I used to take, as a Foundation officer, an ignorant pride in how richly rewarding traveling fellowships proved to be for the students in our institutions of higher learning. Then I found that the origin of the university as an institution was based on the needs of wandering students who discovered that in union there was protection as well as strength. Traveling, therefore, was not a discovery as applied to university personnel. Rather, the universities themselves had come into being as institutions to meet the need of wandering students. Traveling had been rediscovered as an aid to education. It had been discovered far earlier. Then the universities had become so narrow and provincial that traveling fellowships became, to all intends and purposes, a new device. Birds of a feather flock together, especially if the feathers be juvenile plumage.

Time out of mind, man's mind has been marked with groping curiosities—or if you prefer a more transitive word, perpetual inquisitiveness. To this inquisitiveness add the human tendency to associate, to get together, and the wonderful reward of feeling that in association of some kind will be heard explanations that will satisfy individual bewilderment and interpret his own experience to an individual with something like a comprehensible explanation that he can share with his contemporaries by means of association. Thus you will have assuaged the desperate loneliness of individual speculation by supplying a set of beliefs accepted and held in common with many others.

This relief of individual bewilderment and the solace of many persons holding in common well formulated beliefs, seem to me to supply the main reason for the extraordinary appeal and consequently the vitality and spread of medieval universities.

Their main activities were with and through words. The words were spoken in lectures or written in manuscripts such as "The Sentences of Peter Lombard" (ca. 1170). Very early in the development of universities, argument and disputation became the main vehicle for exposing, in words, new or original ideas to the close scrutiny of others and to competent discussion. Dialectic was regarded as the science of sciences in the first decade of the 12th century. In argument, quite understandably, resort was had to authority—often to the authors of classical antiquity, but perhaps more often to the religious authorities of the Church Universal. Printing had not been invented as yet, so the learned men were learned in proportion to the number and choice of authorities they could quote in their arguments, lectures, and writings. The medieval universities, despite such limitation to the power of words, were nonetheless dealing with youth at an age when youth yearns for association and is ready to be enlisted, in point of its loyalties, and is largely inclined to listen to disputation and argument because of an underlying hunger for agreement and the blessed peace and reassurance of a uniform interpretation and belief. Among the products of such universities, therefore, were learning the words, the languages, and the opinions of others, and the spread of agreement of interpretation in religious, philosophical, metaphysical, and—such as they were—scientific

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Dr. Gregg was formerly vice-president of the Rockefeller Foundation, New York, N. Y.; he now resides in Big Sur, Calif.

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fields. And, as a corollary of such an intensive exposure to words and the obiter dicta of authorities, there came a natural but nonetheless impressive refinement of reasoning, dialectic, logic, and rhetoric. Incidentally, rhetoric was defined as "the art of conveying conviction without resort to logic"—a bit of discrimination applicable to modern advertising.

Now these remarks are not merely historical. The needs that produced the vitality and significance of the medieval universities have not ceased to exist. I beg you to be thinking how such needs in our own future will press for satisfaction, and so influence the form of future institutions.

The abuses of the medieval university's approach merged inevitably, and indeed almost by definition, into its failures. Authoritarianism, professional complacency, power and the numbing effect of students' applause and deference, the sterility of merely plausible wordage and the merciless penalties placed upon nonconformity—these seem to me to be the university's main failures. They were failures in a sharply graded society. The bachelor's degree was hardly more than an acknowledgement of a beginner's apprenticeship in learning. It could hardly compare with a master's degree, for that gave the right to teach and, therefore, the promise of a livelihood as well as acknowledged distinction. Amusingly enough, the word "bachelor" appears to have come from vaccalarius, meaning a beginner or underling on a vaccalaria or grazing pastures; hence, a bachelor has an etymological ancestry in common with our word "cowboy."

Let us turn now to some comparisons of the past with the present and the future. Where the medieval professor appealed to reason, logic, dialectic, and quotations from the past, a new figure appeared—not abruptly, not vested with authority, nor confined to any one institution or field of knowledge, but in different places and in different years. This new figure was the individual experimenter who appealed to experience, not to authority, and to observable and measurable evidence provided by and repeated by the senses—repeated and, most troublesome to the authorities, repeatable and repeatedly at variance to the obiter dicta of a blind but authoritative past. The rude challengers of the Renaissance, such as Copernicus or Galileo or Harvey, shook the structure of established traditional thought. These distressing experimenters worked in what came to be called laboratories—and later, like their successors, the professors of today, in institutes—where they appealed for confirmation to the crucial experiment, not to the written and spoken word of an unchallengeable authority. What did they invoke as trustworthy authority? They regarded uniformity of response to the same stimulus—response whether by cells, organs, or organisms—with a respect and finality that had been previously reserved for the obiter dicta conforming with established authority.

The modern period tells another side of its general orientation in its characteristic phrase, "the propagation of useful knowledge." That suggests that there had been for some time critical impatience with the propagation of knowledge that had no apparent use at all. The essence of the modern credo was and is that under the same conditions, cells and organs and organisms of the same sort will show the same or closely similar reaction to the same stimuli; and that very uniformity of behavior, constant and therefore apparently independent of time, came to be called a law of nature. Now since it had the constancy of a law, it offered, obviously, the important opportunity of useful applications.

One of the characteristics of the modern period that offers an interesting

contrast to the medieval attitude is the modern emphasis on the applicability of new knowledge rather than on the mere rationality of explaining phenomena ex post facto. Indeed, the question "What use has this newly discovered fact?" has become so common and apparently so decisive that we find a salutary warning in such phrases as "the usefulness of useless knowledge."

This period, which I have called the modern though it was under way two hundred years ago, has brought us research as its incomparably valuable product. Because experiment is a method of finding and defining the great uniformities of nature that we call biological laws, and because experiment will continue on its present course and characterize the future as well as the present, it is naturally easier to compare the present with the past than with the unknown future. Has our modern experimental approach anything in it to occasion distrust?

If the experimental method has defects, they relate to the inherent tendency of the experimentalist to divide fields into smaller and smaller subdivisions, to know more and more about less and less, to favor the growth of specialism, and to lose sight and respect for the unity and relatedness of all knowledge. Are we going to be unable to put the watch together after we have taken it to pieces, and so many small pieces? I have always liked the French phrase for making an experiment, which is "faire une experience." This French phrase I like because it seems to me to call attention to the chance that an artificial element will vitiate the absolute finality of controlled observation as the arbiter of truth as well as the guidepost for finding the truth.

Perhaps the time has come to discuss the future in contrast to those periods I have called the past and the present. To discuss this future is to offer what I think may be the future of medical thought, medical interest, and the medical approach to the baffling realities of nature and man's place in nature.

I know of no single word for this better than "ecology," but I would quickly add that ecology seems to me to involve, and indeed to insist, on a concern for multiple causation, as contrasted with unique or single causation. Ecology is integrative and synthetic in contrast to being merely experimental or analytic. It allows liberally for interaction and feedback phenomena; admittedly it is complex; but it is predictive, and for that reason powerful. If you say that you do not see that ecology represents a radical change of approach, or at least not as radical a change as did experiment in contrast to the quoting of authority and the use of dialectic, rhetoric, and logic—I would agree. But I would take the position that the ecological approach has qualities powerful enough and new enough to be able to create a new era in medicine. My view is not that ecology in its present condition offers all that needs to be added to medical science. Rather, my suggestion would be that as a relatively new discipline, ecology seems to offer the largest possibilities both for development in its own field and in the likelihood of aiding other fields in medicine to develop further. In terms of its applicability, ecology has something suggestive of the study of the role of compromise, in political science.

No one, I think, would deny that the principle of relativity has produced a new era for physicists. My main suggestion is that ecology will similarly produce a new era for medical scientists. And, among doctors, I hope that public health experts will continue to use, explore, extend, and refine ecology as applied to medicine. They had the lead: they could maintain and even increase it.

Now, if the university was the institution that grew out of the passionate groping, the disputations and the obiter

dicta of the Middle Ages, and if the laboratory (originally called the elaboratory) and the appeal to controlled experiment displaced the rhetoric, logic, and quotation of authority that characterized the medieval university, what kind of institution or new form of human association will best serve the needs and develop the potentialities of a new ecological approach? I repeat that question because it is important. It is perhaps your greatest present concern as officers of health. Will the potentialities of the ecological approach be best served by conventions such as this, or by seminars, or by "workshops," or by national committees, or by graduate schools or "centers" or university institutes or grants-in-aid or "projects" or what?

Asking this question reminds me of a remark made by an Oxford professor (I think it was Sir Charles Sherrington) to my former chief, Dr. Richard M. Pearce, about 1923. It ran this way: "Here, at Oxford, we think that we have worked out over the last 800 years a satisfactory system for teaching the best attitude to the known, and done it with some success. But the immense significance of medical research now faces us with a challenge we cannot ignore. The challenge is, what is the best way to teach the right attitude toward the unknown? That challenge will probably require several decades of trial and error to answer." Now, borrowing from that broad yet penetrating remark, I would say that the present opportunity that faces you as public health men is to create an adequate institution. Either you will first choose and then modify some existing institution or association of human beings to serve your need, or else you will have to find out how to create patiently over the next several decades a new institution to explore and spread the potentialities of the ecological approach.

In the preparation of this paper I discovered that the Shorter Oxford English Dictionary (my copy bearing the date of 1933) did not contain the word "ecology." From this fact I assume that the word may be unfamiliar enough to justify my quoting a definition of ecology given in Webster's New International Dictionary, second edition, unabridged, 1948, as "the branch of biology which deals with the mutual relation between organisms and their environment." I have not offered that definition sooner because I am convinced that definitions in the earlier stages of the growth of a new discipline serve better as a record of that same growth than as a guide for it. Initial definitions frequently become superseded by unforeseen developments. Besides, you are all familiar with the title at Cambridge University of a newly created department called The Department of Human Ecology and University Health Service. So I will simply add one or two closing remarks on what I expect the ecological approach will win for itself in the broad field of medicine.

In its emphasis upon the effect of the environment upon the organism, and vice versa, ecology commits its future to a better study and understanding of multiple causes, and to a deliberately synthetic, as distinguished from an analytic, approach. Ecology, furthermore, seems to be headed inescapably to acknowledge the importance of narration and the role of the past experience of the organism, including its genetic antecedents. Furthermore, ecology perforce must deal with the behavior of aggregates, i.e., with large numbers of organisms, and cannot escape acquiring considerable mathematical sophistication, especially in the field of the mathematics of probability.

The motivation of the ecologist will not be free of the desire to control the occurrence of certain events. But his proofs will be in terms neither of logic nor of authority nor of the too arti-

ficially controlled experiment. The accuracy of his predictions of events under natural conditions will serve as the validation of his knowledge. It will not be merely the observation of the experimentalist and his controlled experiment. The ecologist with an appropriate insistence on the nature of multiple causation will come nearer than his predecessors to answering the prayers for integration of all medical knowledge and a broadening of the specialist's certain if not deliberate narrowness of outlook. The future ecologist's range of pertinent facts that may be related will not only exceed the modern specialist's, but the ecologist may well acquire a working knowledge of the exact nature of relationships between related facts, such as distinguishing types of causes as predisposing causes, precipitating causes, and perpetuating causes. In binocular vision, the two retinal images are not identical. Yet from their very discrepancy comes the perception of a third dimension—that of distance. To the exactitude and dependability of the experimentalist, there can be added, as I would predict, by the ecologist, something suggestive of the integrative action of the nervous system, and that wonderful fusion of variant evidence that we usually call common sense.

In closing, I would simply say that what I have referred to as the new ecological approach to biological phenomena offers to my mind probably the most promising, and certainly the most interesting, opportunities for medicine as a whole and particularly for public health. We are at a threshold.

Postdoctoral Resident Research Associateships

The National Academy of Sciences-National Research Council announces the terms of postdoctoral resident research associateships for the academic year 1957–1958. One group of these associateships is supported by the Argonne National Laboratory and the Oak Ridge National Laboratory. Here there will be "opportunity to spend a year or two carrying on basic research in the various branches of the biological and physical sciences."

Another set of associateships is supported by the National Bureau of Standards in Washington, D. C., and Boulder, Colo., and the Naval Research Laboratory. These provide opportunity for advanced training in basic research in the various branches of the physical and mathematical sciences, and in engineering psychology and psychophysics.

Both groups of associateships are for "young investigators of unusual ability and promise" who already have either a Ph.D. or Sc.D. degree, are United States citizens, and have "demonstrated superior ability for creative research." The annual gross stipend is $7,035 subject to income tax, except in the case of appointments in engineering psychology at the Naval Research Laboratory where it is $6,390. The final date for applications is January 11, 1957, awards will be made about April 1, and the associateship tenure may begin after July 1, 1957.

Application forms and additional information for the Argonne and Oak Ridge associateships from the Office of Scientific Personnel; for the others from the Fellowship Office, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C.

Social Science in Public Health

BENJAMIN D. PAUL, Ph.D.

As public health does less and less to the people, and more and more with the people, good intentions will no longer be enough. How we may learn to work understandingly and productively with people is the burden of this provocative presentation.

For several decades the comparative study of communities has been a central concern of the social scientist, whose primary aim is to discover the "properties" of human behavior. Knowledge of these properties is of particular interest to public health professionals whose characteristic object of concern is the social rather than the individual organism. In a manner of speaking social organisms have their own anatomies and physiologies. Although a community is composed of individual beings, the totality is much more than the sum of its parts; it has properties of its own.

Any community not only has a habitat; it also has its social structure (the way people relate themselves) and a corresponding cultural pattern consisting of shared ideas, attitudes, assumptions, and values. The sociocultural system of any group is as much a part of the people's environment as the physical and material surroundings in which they live. As such it plays an important role both in shaping the profile of health and illness and in influencing the outcome of programs to improve community health. Analysts of sociocultural systems can contribute their share to fundamental health research, especially where social factors have etiological significance, as in psychiatric and chronic diseases. They can also serve the cause of improving program implementation, particularly by assisting in the difficult task of program evaluation.

Evaluating Health Programs

Since the term "evaluation" often carries specialized technical connotations in public health work, the word "assessment" may be more convenient for present purposes. By and large, program performance can be assessed according to criteria of effort, effect or process, or any combination of these. The effort criterion measures the energy and action of the health team. By this method progress is reported in such terms as miles traveled, meetings attended, talks given, pamphlets distributed, movies shown, inquiries received, visits made, interviews held, patients attended. The effect criterion measures results of effort rather than the effort itself. Use of the effect method usually requires a clear declaration of program objectives. The project specifies what it aims to get done—what changes in incidence or attitude or organization it seeks to induce—then checks to see how much was accomplished in the indicated direction. The process criterion assesses the route by which the effect was achieved; if no significant changes are registered, it may still be constructive to analyze why the program went around in circles.

Assessment of Effort—The first of these three, the effort yardstick, draws its appeal from a number of circumstances. It is usually easier to maintain administrative statistics than to know or measure what is actually happening

to the community. There is a certain concreteness and objectivity about itemizing things done and people seen; these can be measured and totaled and they therefore count as "facts" rather than surmises. Furthermore, American culture seems to place a high value on effort for its own sake—if one keeps busy, good will presumably come of it. In the estimation of many middle-class Americans to measure one's busyness is almost like measuring one's virtue and effectiveness.

In part the effort yardstick of program assessment is a kind of magic by which we keep up our spirits, but it has real value, too. At the very least statistics of effort can be negatively conclusive. If figures show that an agency is inactive, it can fairly well be inferred that little good is being accomplished in the way of health promotion. It does take effort to get anything done, even though not all effort leads to favorable results.

The effort yardstick answers the question: What did you do? After this is disposed of the next legitimate question is: Did it make a difference? This query calls for the second method, or the effect yardstick.

Assessment of Effect—Suppose a health agency is dedicated to changing a community's health habits or attitudes. After a period of effort the agency wants to know: Did any change occur? Was the change the one intended? Was the program the cause of the change? There are fairly standardized technics for supplying the answers. In principle, the classical experimental design for this purpose is straightforward. By means of interviews or questionnaires and use of proper sampling methods the health habits of a community, for example, are measured before the campaign and again after the campaign.

Some years ago Dodd employed this design in a number of Syrian villages and found that over a given period of time hygienic habits had improved by about 20 per cent as he measured them. Conceivably the improvement might have come despite the health campaign and not because of it. To test this possibility Dodd had also made base line measurements in other Syrian communities where no health programs were attempted, assuming that on remeasurement these "control" villages would show less health improvement than the experimental ones. Actually, the control villages also showed an improvement of about 20 per cent during the course of the same interval, thus making it difficult for the health workers to claim credit for the change in their experimental villages. Why did this happen? In the Syrian instance we do not really know. This illustrates a limitation of the method of measuring effect; it tells us whether but not why. To find the answer we must use the yardstick that measures process. Another example will help clarify matters.

Recently a team of psychiatrists, sociologists, and social workers engaged in an intensive six-month campaign to alter attitudes toward the mentally ill in a fairly prosperous prairie town in Canada. They reasoned that an unfavorable attitude toward discharged mental patients was a factor influencing the high rate of relapse and readmission to overcrowded hospitals. They established themselves in the experimental community, gained the cooperation of civic leaders, editors, and other influential persons and used multiple means and resources: motion pictures, pamphlets, special books placed in the library, notices in the paper, radio broadcasts, public speakers, as well as

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Dr. Paul is associate professor of anthropology in the Harvard University School of Public Health, Boston, Mass.

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small group discussions, and so forth.

Before and after the campaign they collected several hundred questionnaires designed to reveal attitudes toward the mentally ill—conceptions of cause, curability, degree of personal responsibility for helping a sick relative, willingness to associate with a person discharged from a mental hospital. Like Dodd in Syria they twice administered the same set of tests in another town where no campaign of health education was attempted. As expected, the people in this control town showed no significant change of attitude over the six months' interval. But unfortunately, neither did the people where the intensive educational campaign had been tried. The project personnel had a good measure of their effect—virtually zero. The reasons for this disappointing outcome were instructive. But to understand the reasons they had to investigate process. Incidentally, it should be noted that useful program assessment in terms of process does not necessarily hinge on program success. It can be equally illuminating to seek out the processes that underlie failure.

Assessment of Process—In the Canadian experiment three circumstances made it possible to understand the processes at work. For one thing project personnel conducted a series of intensive interviews before and after the educational campaign; this material enabled them to analyze the dynamics of popular beliefs about mental illness. For another, they took note of the changing reception they received; from cordiality the attitude slowly turned to apathy and ended in hostility. Furthermore, they used a social science frame of reference to "make sense" of the evidence they collected and observed.

This in brief is what they concluded about the process that negated their efforts. One of the ideas they had sought hard to implant was that no sharp line divided the sane from the insane; that personality types fell along a continuum running from the fully normal to the fully abnormal; and that most released hospital patients were therefore not essentially different from other people and should be treated accordingly. The aim of this type of information was to increase understanding and tolerance and thus reduce relapse rates.

But people in the community clung stubbornly to their black-and-white perception of normality and abnormality. At the bottom, never certain about their own sanity, they had apparently erected a wall of psychological defense that sharply divided the sane from the insane. This attitude worked hardship on the hospitalized minority, but it gave a measure of reassurance to the majority and helped keep them in the fold of the normal. In challenging this popular attitude the educators were arousing dormant insecurities. The citizens preferred to let sleeping dogs lie. Subjected to rational educational efforts and having no ready rational defenses, they did as most people do under the circumstances, after an initial period of willing cooperation, they showed outward apathy and ultimately expressed open antagonism toward program personnel.

The practical lesson in this Canadian case is fairly clear. Before trying to change old health habits and ideas for new, whether these concern sanity or sanitation, it is wise to examine what the established habits and ideas are and, more important, what psychological and social functions these beliefs and practices perform. One must understand not only the explicit, but also the implicit purposes of a community's customary ways. It is especially in identifying the implicit functions of a group's belief and behavior patterns, that social science can hope to be of help. While social scientists can assist in measuring program effects, their greater contribution to program "evaluation" will

probably lie in probing beneath cases of success and failure to unravel the implicit processes ever at work in the community.

So much for program assessment. It should be evident that social scientists, if judiciously selected and used, can help program operations in other ways as well. They can do social mapping in preparation for program planning, and they can help keep programs active and effective by liaison work between the people in the community and project personnel. This does not necessarily imply that social scientists should act as social workers or health educators, who serve as operational members of the public health team. Often social scientists can make their best contribution by checking on the public pulse to gauge the impact of health action, rather than participating directly in the action phase of the program. The judicious use and selection of social scientists requires an awareness of the different specialties of social research and their customary methods of investigation.

Social Science Disciplines

There scarcely exist universal social scientists, no more than there are universal natural scientists in this age. Actually, men are trained as economists, political scientists, psychologists, sociologists, or anthropologists, receiving a doctoral degree in one or another of these disciplines but usually not in social science as such. This fact is of practical importance to health workers, since a given teaching or service situation may benefit more from one particular discipline within the social sciences than from another.

Each of the social science disciplines has its strong points, and although the similarities among the several social sciences may be greater than the differences between them, it may be useful to consider the peculiarities of method that distinguish several of the social disciplines. The fields of psychology, sociology, and anthropology all have in common the fact that they tend to produce their own data; in this respect they contrast with government and economics, which lean heavily on library documents and statistical compilations. Yet psychology, sociology, and anthropology differ among themselves with respect to the kinds of primary data they tend to produce. Social psychology leans heavily on experimental data, with people or animals used as subjects. Sociology leans heavily on the use of questionnaires and interviews, most commonly single interviews of many people. Anthropologists lean heavily on field notes, based on their own direct observations of behavior and, as a rule, on repeated and extensive interviews with relatively few informants whom they come to know fairly well.

To some extent the difference in method between anthropology and sociology reflects a difference in type of population with which they have customarily dealt; it may also reflect a difference in the stage of inquiry, anthropologists more often working in situations where less is known and where less can be taken for granted. Thus, sociologists have studied differences between American parents who permitted their children to take part in trial polio vaccine tests and parents who refused to extend such permission. The issue was formulated, the population was subdivided according to a some-do and some-do-not criterion, and a number of questions were asked which were successfully pretested to reveal systematic differences between the two subpopulations.

Edward Wellin, an anthropologist, was likewise interested in a some-do and some-do-not criterion when he undertook to explain why it was that some women in a Peruvian town yielded to health department persuasions to boil

contaminated drinking water, while many other women, equally exposed to persuasion, did not change their habits. However, he did not set up aforehand two sharply contrasting populations, nor did he design a set of questions to ask systematically. Working in a situation where he could not know in advance what questions would turn out to be relevant, he spent several months talking to housewives, conversing with the local hygiene worker, and observing both in their daily routines. He finally found that he could classify his population with respect to the water boiling issue into six types. Two groups of women were already in the habit of boiling their water even before the health department arrived, although the groups did so for quite opposite reasons. Two other groups of housewives yielded to persuasion, but the motivating factors were distinct. Two large groups remained unconverted, and for dissimilar reasons.

A key fact that emerged only slowly was that the boiling of drinking water, if it was done at all and regardless of the particular motive that inspired it, was always performed during the short interval immediately following the preparation of breakfast. All other times of the day were ruled out for a variety of practical and cultural reasons, including the pervasive belief that water boiled in the afternoon or evening and kept overnight would have to be reboiled on the following day. This belief was related to conceptions of "hot" and "cold" substances so common in many parts of Latin America.

Thus, the initial job of the anthropologist is often not so much that of devising questions as finding out by a combination of qualitative methods what are the relevant questions to ask. In comparison to sociologists, then, anthropologists tend to be less formal in their approach, less dependent on random and representative sampling, and less concerned with measures of statistical significance. On the other hand, they place greater emphasis on the necessity of learning the local idiom, on establishing close relationships with a limited number of informants, and on direct observation. Each type of social scientist can make his appropriate contribution to public health practice, the selection depending on the problem, the population, and the stage of inquiry.

Public health workers cannot be expected to take best advantage of social science concepts and methods unless they have an opportunity to learn how social scientists work. One way to provide such information is to build social science instruction into the curriculums of public health schools.

Social Science in a Public Health School

All degree candidates at the Harvard School of Public Health are now required to take an orientation course called "Ecology: Biological and Social." Lectures in the course cover such topics as regional geography, demography, population dynamics, and human maturation. Social scientists in the school and elsewhere at Harvard University present lectures on communication, public opinion, authority, social structure, culture pattern, family, and community. To discuss the lecture material and relate it to students' own experiences the class is divided into small sections once each week. To provide a springboard for productive discussion in these informal seminar sessions, all students are asked to read a series of case studies of community reactions to specific health situations and health programs. Before publication * these studies were

* Health, Culture, and Community: Case Studies of Public Reactions to Health Programs. Edited by Benjamin D. Paul with the collaboration of Walter B. Miller. New York: Russell Sage Foundation, 1955.

pretested in numerous seminars at the school and rewritten by the authors in the light of comments and criticisms in order to maximize the teaching potential of the material.

Typically the case studies report what does happen, not what ought to happen. They cover a variety of conditions and problems, ranging from an analysis of the doctor-patient relationship in rural India to an examination of the nurses' unofficial functions in an urban well baby clinic, from a program of mental health education to a project of preventive and community psychiatry, from an effort to educate Peruvian housewives to boil contaminated drinking water to an attempt to conduct a health survey in a socially divided Alabama town. The 16 studies can be grouped under six broad categories: understanding the community, reaction to crises, sex patterns and population problems, effects of social segmentation, vehicles of health administration, combining service and research. Each study raises a practical problem, presents the pertinent facts, analyses the sources of success or failure, and draws attention to some of the wider implications, ending with a summary and a selected list of annotated references for optional additional reading.

One of the points of view the case materials convey is that culture is a web of meaning and that this web interposes a layer between man and his natural environment. The concept of culture is obviously of importance to people in health education who seek to change collective habits. It may be less obvious that culturally conditioned perceptions have an important bearing on the more "technical" aspects of public health, such as that of sanitary engineering which is concerned, among other things, with delivering a safe water supply. The Peruvian study by Wellin, as already indicated, dramatizes the many ways in which water is subject to cultural interpretation. Wellin also reports that an anti-Chagas campaign had unforeseen repercussions in Peru.

Good technical work had actually brought Chagas' disease under control. But the rural population, regarding flies a greater menace than triatomes, the bearers of Chagas' disease, used the prevalence of flies as their criterion of success. They were pleased when the spraying program reduced the swarming flies, but dismayed when flies eventually returned in annoying force. People began to say that the insecticide was very effective at first but that it was now of inferior quality; that the spraying personnel were getting very careless in their work; and that the campaign officials were becoming corrupt, appropriating the good insecticide for some ulterior motive and substituting a diluted mixture. Scandalized by what they considered a fly-control fiasco, the citizens prepared a resolution which they presented in the capital of Peru, forcing the health officer responsible for the campaign to face charges of malfeasance. He was eventually cleared, but the whole affair was unpleasant for the people in public health. Nor did the episode improve public relations, despite the good work in lowering the incidence of Chagas' disease.

In addition to imparting social science concepts, the case studies help create respect for cultural or subcultural differences. Such group differences as food habits and religious practices are evident to students of public health, but it is often less apparent that cultural variation also operates in many other areas that directly affect health work, e.g., varying cultural expectations with respect to personal privacy, structure of the family, and the doctor-patient relationship.

What the cases also convey is that culture is not a mere collection of customs but tends to be a system. Thus some customs are difficult to change

not only because they are familiar and "natural" to those who practice them, but also because they are linked to other customs. Because of this linkage, planned changes in one area of the culture often bring about unplanned changes in other aspects of the system.

The cases are useful in making public health students aware of the fact that they, too, have cultural preconceptions which may possibly impede their technical effectiveness. For example, they can be made aware of the fact that, as creatures of their class or culture, they tend to regard change as a value in itself and therefore intrinsically good, but that there are things in this world which might just as well remain unchanged for the moment.

Moreover, many Americans have a passion for forming councils and committees as instruments for getting across new public health habits and technics. This penchant for creating voluntary groups, successful as it is in some situations, may work against them in other cultural settings. A case study from Brazil documents how the formation of a village community council on the American pattern impeded rather than promoted the aims of a community development program. A Spanish-American case from Colorado indicates how a cooperative health association, intended to provide better medical care, acted instead as a barrier to health improvement among Spanish-speaking people. The Spanish-Americans may have wanted better medical care, but they were not prepared to engage in a series of activities that appeared irrelevant to them: attending meetings, discussing policy, electing officers, making and following by-laws, and paying dues to an organization.

The realization that health workers, too, have their culturally conditioned assumptions and values may enable them to see that in some instances they can more effectively communicate new health knowledge and skills if they strip down their program to these essentials, omitting the cultural accretions that are not intrinsic to their mission and that are less readily acceptable to the recipient population. While it may perhaps be our duty to help people help themselves to better health, it is not necessarily our duty to make them over in our own cultural image.

Dr. Samuel Darling, a malariologist who worked on the Panama Canal project, once remarked: "If you wish to control mosquitoes you must learn to think like a mosquito." This advice applies not only to mosquito populations one seeks to damage, but also to human populations one hopes to benefit. If one wishes to help a community improve its health, one must learn to think like the people of that community. Before teaching people new health habits, it is wise to learn the existing habits, how these are linked to one another, what functions they perform, and what they mean to those who practice them.

The Public Health Worker and the Population Question

JOHN J. HANLON, M.D., M.P.H., F.A.P.H.A.

Public health, we are quick to admit, has tended to accelerate population growth by the many lives saved. There are serious undertones to the increases in world population. What should be our stand in this matter? The author makes eight recommendations that should guide us in our rebuttal of the charges leveled against us.

Imprudent, Impetuous, Irresponsible, Immoral. These are some of the adjectives which have been aimed at you because your efforts have been so successful in making possible longer and healthier lives for more people.

Public health workers, sociologists, political scientists, and others, have long been aware of a relationship between public health activities and increases in the populations of nations and of the world. Awareness has been sharpened more and more by recent world events, especially by the sustained postwar rise in birth rates and by the growth and success of international technical assistance programs in health and sanitation. This awareness has reached the point of acute concern which is voiced in part by more and more vocal questioning, indeed, even condemnation of the activities of the dangerous doctor, the heedless hygienist, and the cynical sanitarian.[1-3] In view of this, it may be of value to consider some of the facts of the case as they now appear, some of the problems and interrelationships involved, and some of the pros and cons on the question, leading, it might be hoped, to a basis for a sound and honest attitude by public health workers on this growing, touchy subject. First let us take a general look at the quantitative history of man.

On the basis of anthropologic and archaeologic researches, it would appear that man has existed as a distinct species for at least a half million years. It is logical to assume that throughout this long period, and in fact during any particular interval of it, he increased to the extent to which his way of life and his environment allowed. If nature presented him with circumstances which were adverse to the obtaining or production of food, as he was accustomed and able at that time to obtain or produce it, the tendency for his numbers to increase lessened. Conversely, if he found new places or new ways to obtain or produce food, his numbers increased. Similar intimate, natural relationships developed with regard to disease, climate, and many other factors. Undoubtedly, during the approximately 500,000 years of man's existence, his rate of growth has been marked by considerable fluctuation. However, the best available evidence indicates a very gradual but more or less steady growth in man's numbers up to an asymptote of about 450 millions, a level which still prevailed by the mid-seventeenth century.[4] During the comparatively brief period of 300 years since, there has oc-

Dr. Hanlon is medical director, Public Health Service, and chief, Public Health Division, International Cooperation Administration, Washington, D. C.

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curred what is probably the most significant and far-reaching biological phenomenon in the history of our planet. Man's numbers multiplied fivefold to about two and a half billions. The current rate of increase is about 100,000 a day, or about 36,500,000 a year. This is the equivalent of adding a Madison, Wis., each day, or a new nation larger than Mexico, Spain, or Korea, each year.

To what may we attribute this sudden, tremendous increase? From history and the observation of various groups of people now existent, it is known that different kinds of cultures can support different amounts of human life. Thus, it is estimated that in the hunting-gathering culture of pre-Columbian North America, 100 square miles could support about 25 people. When, in addition, use was made of sea and river life, as in the case of Pacific coastal tribes, the figure rose to 150. From these primitive cultures, groups may pass through successive advances in civilization, each sustaining larger numbers of people per unit of land area. There developed nomadic herding with its unfortunate ill effects on the ground cover; primitive temporary agricultural settlements which had to move after exhaustion of the soil; permanent agricultural settlements with conservation of water and soil through diking, ditching, terracing and paddying; agriculturally-centered city-states such as those in Lower Nile, Lower Mesopotamia, the Indus and Yellow River valleys, the northern Andes and Lower Mexico; trade-centered city-states such as Phoenicia and Venice; and, more recently, industrially-centered, tightly packed civilizations based upon efficient organization of labor and intensive application of technical knowledge.

Thus, if population growth data are studied, it becomes apparent that forces in addition to public health have been at work. This is indicated also by the fact that the inception of the recent marked upswing in the world's population actually antedates the modern public health movement. Beginning about 1650, a significant quickening in the rate of population increase may be observed. It is difficult to determine the relative importance of the various factors which must have been involved in the reduction of mortality and in the resulting increase in population. It is evident, however, that the changes during the first part of this period were not due to significantly effective public health measures, for few, if any, existed. Rather, it would appear that the determining roles during that period were played by changing social organization, a rising standard of living, improved work conditions, and the appearance of certain social reforms.

In Europe, a significant excess of births over deaths was already well established during the eighteenth century, producing a generally steady population increase despite fluctuations due to relatively frequent epidemics and occasional famine. Then in the mid-nineteenth century, there began a marked decrease in mortality with a consequent upsurge in the rate of population increase which reached a peak in the early twentieth century, despite the large number of emigrees. This upsurge may be attributed to the development of new means of transportation, which facilitated a wider distribution of goods and people; technological progress manifest by the industrial revolution and insuring the means of living for greater numbers of people, and particularly more recently to the widespread application of newer knowledge concerning the causation and prevention of disease en masse. Subsequently, despite continued decrease in death rates, the rate of population growth in Europe slowed down because birth rates began to fall rapidly.

The picture of population growth in

the United States differed from that of Europe in three respects. First, during the early nineteenth century, the rate of natural increase was much higher than in Europe, probably due to the young average age of those who came to America. Then, throughout the rest of the century, the rate of natural increase underwent a rapid decline due to rapidly dropping birth rates. Thus, births per 1,000 women aged from 15 to 44 years in the United States dropped from 276 at the beginning to 208 at the mid-point, to 130 at the end of the nineteenth century. Finally, despite this marked slowing in natural increase, the flood of immigrants prevented a drop in the rate of total population growth.

We are fortunate in having available a recently published review of studies on the relationships between population changes and economic and social conditions, "The Determinants and Consequences of Population Trends," issued by the Population Division of the United Nations Department of Social Affairs.[5] This extensive review indicates not only that many basic aspects of the problem have been scarcely considered, but that much disagreement exists over the interpretation of a large part of what has been studied. One thing appears obvious. No single factor, such as public health activity, can be considered alone in relation to population change, as if it existed in a social and historical vacuum. Indeed, an exceedingly complex series of interrelationships is involved in the dynamics of population growth, stability or retrogression. An elementary list of factors to consider includes areal limitations; climate; the present size, spacial distribution, and age structure of the population; the present and potential resources for food; availability and use of efficient agricultural implements, machinery, and technics; the quality of housing; policies and practices with regard to public health and education; the existence, availability and utilization of natural resources and of sources of energy; means of verbal and physical communication with special emphasis on farm-to-market roads; trends toward urbanization and industrialization; the tax and financial structure, especially the availability of short- and long-term loans at reasonable rates of interest; policies relating to the composition, full employment and adequate compensation of the labor force; and a multitude of cultural factors.

Time does not permit adequate consideration of even one of these factors. A few examples however may serve to illustrate the extent to which some of them may bring about significant population increase. Anyone who has studied biology knows that the addition of new sources or types of nutrient will result in increased bacterial growth or in the size of a herd. That this applies also to human beings is not surprising. Thus in the eighteenth century, the sweet potato was introduced into China as a cheap, easily grown, rich source of carbohydrate in place of or to supplement grain. As far as is known, no other significant factor was changed. Certainly no public health or sanitary activities were pursued. Within fifty years, the population increased from an estimated 60 million to 160 million. It is interesting to note that the inception of the population spurt in Europe dates from about the time of the introduction of the white potato from the Andean region of South America.

Biology has also taught us that the larger the area effectively available to a species, the more that species tends to move and increase. Thus an inoculum multiplies and spreads throughout a container of broth. This has been the experience of our species, too, most noticeably when it discovered or developed new lands. It is interesting that the transportation industry represented by the railroads recognized this relation-

ship in 1880 when it developed what became known as Wellington's formula:

$$T = CP^x$$

where T represents Traffic Volume
C represents Area Coefficient
P represents Population
^{x} represents Economic Activity

It was obviously more than chance that caused the beginning population upswing in the world to coincide with the great period of discovery, settlement and exploitation, and with more widely available and more rapid means of transportation.

Life, in the final analysis, depends upon energy. Perhaps our egotistical wish to feel that we determine the amount of energy of all types used in the world blinds us to the more pertinent fact that actually the amount of energy determines the numbers and nature of our kind. Some members of the determinant school of sociology have analyzed the history of man from this viewpoint and have found that apparently without exception, each time a new source of power or energy has been discovered, there has occurred a period of unrest and strife resulting in a smaller number of units of people—clans, tribes, nations, or alliances. There then has followed an increase in production and a marked upsurge in population.

Unquestionably, public health measures have been a major contributor to the acceleration of population increase during the past century. It would be strange indeed for us to deny it. Up to the present we have played our role essentially in four ways: (1) by improving the chances of fruitful conception; (2) by greatly increasing the chances of survival among infants and young children; (3) by preventing the premature deaths of many young adults who represent the most fertile component of our population and the group with the longest period of future fecundity; and (4) by greatly reducing the number of marriages dissolved by the death of one partner. This has allowed a longer average period of effective married life. Incidentally, the increase in the number of divorces has the opposite apparent effect but its real effect is not of the same magnitude.

Among the social and economic factors related to the dynamics of population, consideration must be given to the degree of urbanization and industrialization in contrast with the extent of rural and agrarian life. Ever-increasing urbanization and industrialization are two of the most striking phenomena of our time, and, of course, are closely linked. They have a curious two-phased effect upon population growth—initial encouragement followed by secondary retardation. The sequence of events is complex, but basically would appear to be about as follows. Industry, concentrated in centers of population, and offering a means to obtain cash income, attracts especially the more vigorous and adventurous young adults. At first they tend to follow the old established essentially rural customs of their kind, marry young and aspire to large families. Sexual union among them is more fruitful because of their youth, and because of the long average remaining period of fecundity. To this extent, industrialization and urbanization result in a substantial initial increase in the rate of population growth.

However, with improved education, growing sophistication, the wish for an improved standard of living, social rivalries, and competition for time and income, there occurs an emphasis on rationality and independence of tradition, with a breaking away from the old conservative cultural ties. Marriages are delayed and families kept small for the sake of more education, increased income, or improved social position. Children come to be considered less an economic asset and more an economic burden. Family life becomes less co-

hesive because individuals participate in many other institutions and have many contacts outside the home. Because life becomes increasingly complex, sexual intercourse becomes less frequent. Hence, industrialization and urbanization result eventually in a decreased rate of reproduction and population growth. This has been found to hold true in Eastern as well as in Western civilizations.[6]

A corollary of the foregoing should be noted in passing. With the departure of significant numbers of young people from the rural areas to seek the attractions of urban-industrial life, there is left on the farms a generally older, less fertile group with a shorter life expectancy, hence fewer years within which to have children. They, however, tend to be a less adventurous, more conservative group which clings to the old ways and traditions; but, gradually, some of the attitudes, desires, benefits, and behavior of the cities will filter back to them and their rate of increase may slow up accordingly.

At this point it is important to consider briefly a few of the facts known about human fertility. Age has a definite effect upon the fertility of women. In their valuable study of the Hutterites, Eaton and Mayer [7] found that the peak of fertility occurs during the 22nd year, when seven out of every ten females were pregnant. Subsequent ages are gradually less productive. This conforms with similar observations with regard to the female [8] as well as the male.[9] Approaching it from another viewpoint, Guttmacher [10] found that "the time required for a first conception increased by seven-hundredths of a month for each year of the wife's age and almost two-fifths of a month for each year of marriage." It follows therefore that the older the average age at marriage of a group, the less the initial fertility and the total fecundity.

With regard to maximum potential fecundity, the experience of the Hutterites, among whom most factors encourage unlimited reproduction, indicates an average of 13 live births per female. This is based upon an average total of 14.5 pregnancies from age 15 on. Actually most Hutterite women marry after age 20 and have an average maximum potential fecundity of 10.8 children. The length of time within each month that a woman is fertile is of great importance to the question at hand. It has been estimated by Greenhill [11] to be "a matter of hours, certainly no longer than a day." On this basis, it would seem logical to assume that the less frequently coitus occurs, the less the probability of exposure of an ovum to spermatozoa. In relation to this, an average of 244 potentially effective copulations per live birth were necessary in a group of Baltimore women in their twenties.[12] The comparable figure for the Hutterites has been estimated at only 108 copulations per live birth. Another factor of significance is the finding of a correlation between the age of semen and its biological effectiveness, the degree and quality of mobility being enhanced by frequent ejaculation.[13]

Certain writers hold that modern industrialized-urban life tends to reduce man's reproductive capacity. Most however emphasize that the decline in family size has been brought about by the practice of family limitation. Both viewpoints are subject to a certain amount of question—the former because their definition of reproductive capacity apparently relates to biological potential, ignoring the importance of behaviorial factors, and the latter because they assume greater conscious and deliberate family limitation than probably exists. Actually the reasons, as have been indicated, are quite complex, involving many social, economic, and biological factors. Possibly of very considerable importance is the interplay of the factors relating to fertility which have been

described and the factors which influence the frequency of coitus. Many have referred to the generally higher birth rates in the poor or underprivileged, isolated rural population, and in those who live in the less well developed areas or countries as against the lower birth rates in the urban areas of industrialized societies. But compare the two. There are numerous reasons in the latter for less frequent coitus: later marriage, more frequent absences of husbands or wives due to travel or work, more separations and divorces, and many more diversions.

Visualize the typical male in our industrialized urban society. At the end of the work day he returns to a warm, well lighted, comfortable home, perhaps mixes a cocktail, reads the evening paper, then sits down for dinner which is a social highlight, involving discussion of the day's activities or of current events. Following dinner there are many things from which to choose—magazines, books, radio, television, sports, movies, bridge with the neighbors, etc. There are many creature comforts and pleasures, and many emotional outlets. All too soon the evening is past and it is time to rest for the demands of another day. Visualize on the other hand the evening of the underprivileged person or of one in most of the less well developed areas. He has finished a generally unrewarding and uninspiring day and returns to a simple, poorly constructed, and poorly furnished home, without artificial heat or light. If there were light, perhaps he could not read because he has not had the opportunity to become literate, and if he were literate, he could not afford much if any reading matter. The humble evening meal is most familiar and there is little to discuss while consuming it because there is a drab, uninteresting sameness to each day's bitter struggle. After dinner there is no radio, no television, there are no movies or other diversions save perhaps a brief conversational exchange with a neighbor over a briefly soothing pipeful. Soon it is dark and cold and there is nothing to do but share body heat and the sole emotional release that comes from nearness and intimacy with one's mate. Creature comforts and pleasures are indeed few in kind and it is natural that more frequent recourse is made to those at hand. Out of such frequency of intercourse comes more biological opportunity for successful impregnation.

Reference has been made to the less well developed areas. Understandably there is concern over the rapidly declining death rates occurring in these areas in the face of high birth rates. Certain considerations should be borne in mind, however. There are a number of reasons for their rapid mortality decreases at this time. They have the benefit of technical knowledge which required a long period of experimentation and trial and error in the presently advanced areas. The practical application of this knowledge is now possible for them at low per capita cost because of the massiveness of their problems, because of the development of relatively simple and inexpensive technics, and because of the present achievement of international cooperation and assistance on the basis of mutual long-term benefit. Another important reason is the great historic striving for independence and national identity throughout the world with stress on "catching up" as quickly as possible in education, health, and technical, industrial and economic progress. Because so much needed to be done, achievements have been rapid and dramatic. It would be unrealistic however to expect improvements in health or other fields to continue indefinitely at the same rate. In the field of health, preventable communicable diseases have accounted for a large part of the illness and death and it is in this area that

practically all the gains have occurred. Other gains will be more difficult and time-consuming to achieve. This is borne out by the slowing in the rate of mortality decline in some countries, such as Ceylon, British Guiana, Japan, and others.[14]

After studying many aspects of this question with particular reference to its relationship to population, the Woytinskys [15] concluded, "The growth of world population in the past three hundred years obviously does not express the secular trend and cannot be projected indefinitely into the future. Rather, it has been a unique, unprecedented and unrepeatable phenomenon of limited duration. It had a beginning in the not too distant past, and it will have an end, perhaps, in the not too remote future. The slowing down and leveling off of growth in world population seems unavoidable. The question is only when will growth stop and at what level."

The possibility of a reversal must always be kept in mind. Despite the marked improvements which have occurred in the mortality picture, if concurrent progress in fields other than health does not occur, a slump in the curve of health progress may be anticipated. Thus Stolnitz,[16] who refers to social and economic factors "more as permissive elements than as precipitating factors," states "It is obvious that the impact of medical skills on today's underdeveloped areas can be enormous. Whether the permissive elements will also be adequate is perhaps the foremost problem confronting half the world's population." It should not be overlooked that some of the same social and economic factors which affect mortality also affect fertility. Their relationship to mortality is not necessarily the same as their relationship to other factors which contribute to population change. Thus factors which contribute to the decline in mortality may not necessarily raise the rate of population growth, for they may also contribute to a decline in the birth rate. In this regard we have seen public health activities contribute to school attendance and improved cerebration, to industrial development and urbanization, to the general income level and the improvement in the standard of living, to an understanding of man's physiological and reproductive functioning, and to a better appreciation of his place in society. Beyond this, it is reasonable to expect that some of the same forces which have been speeding the decline in mortality will also effect a speeding of a lowered birth rate, hence a deceleration of population growth. In other words, it is possible that the so-called dangerous time lag between lowered mortality and lowered fertility may be telescoped.

Of necessity, much has been left unsaid. No mention has been made of the great possibilities of: more efficient land use, development of new agricultural technics, improvement of plant and animal strains, application of nuclear energy to power development, irrigation, water distillation, food preservation, more adequate utilization of solar energy, reduction of food wastage from insects and vermin, Krilium soil treatment, hydroponics, the release of land for food use as a result of inexpensive artificial fibers and plastics, the food value of algae, the possibilities of sea farming and sea breeding, the possibility of more artificially manufactured foods, the need for less energy food as a result of increasing mechanization on farms as well as in industry. The technological possibilities of the future seem vast indeed and give additional cause for reasonable optimism and hope.

What may we conclude? First, we should frankly and willingly admit that public health effort has saved lives and has contributed to population increase; second, we should realize, however, that

public health is only one of the many factors involved in this social improvement and population increase; third, that public health measures tend to be more successful more rapidly than activities in other fields; and fourth, that the interrelationships of these fields and ours in terms of the effects are relatively little understood.

And what should we recommend? First, we should encourage and participate in more studies of the population question in general and especially in its relationship to public health. Second, we should encourage and participate in more studies of the relationship of public health to other aspects of life and ecology—economy, culture, purchasing patterns, communications, and agriculture, to mention but a few. Third, we should encourage and wherever possible assist in the acceleration of progress in other social and economic development fields. Fourth, we should participate in and if necessary promote the development of political, organizational, and economic answers to questions such as the more adequate distribution of foods among people, communities, and nations. Fifth, we should insist that technical assistance to underdeveloped communities or areas should be multidisciplinary and never limited exclusively to public health or any other single field of endeavor. Sixth, in carrying out public health programs anywhere, rather than to attempt the impossible of bringing about public health changes entirely within the existing cultural patterns, we should encourage changes in those cultural patterns and values which are not consistent with the desirable results of the public health activities. Seventh, we should make it clear that our essential goal is not so much more human beings as better human beings. Finally, to those who condemn us for our efforts and success, we should express the conviction that man's future is to be found not in the continuation of sick, frightened creatures with eyes turned earthward, but in strong, alert, and healthy people looking with determination toward the sun.

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A Radioisotope Technic for the Rapid Detection of Coliform Organisms

GILBERT V. LEVIN; VENTON R. HARRISON; WALTER C. HESS, Ph.D.; and HARRY C. GURNEY

The authors point out that their method for the rapid detection of coliforms in drinking water may have other applications in food and milk quality control. If the method should work for total bacteria determinations, it would have important civil defense implications.

The fact that it is impossible to determine the bacterial quality of drinking water at the time it is consumed is a cause of constant and major public health concern. With the increase in size and complexity of municipal water supply systems the public health hazards and consequences of contamination have become ever greater. Should contamination be accidently or deliberately introduced into a water system, routine bacteriological examination would not detect the dangerous condition until two or three days later. By that time the water might have been distributed and consumed over a large portion of the community. For this reason much attention has been focused on the need for reducing the length of time required for bacteriological analyses. The method described in this paper is an attempt to shorten the presumptive test for coliform organisms to one hour or less.

The delay in obtaining results by all conventional methods is due to a common cause, namely, that the criteria for the determination require direct visual evidence of colonies or gas production by the bacteria. Quantitative determination by the standard method test [1] requires that a single coliform bacterium must give rise to a population of 1,700,000,000 cells [2] before the accumulation of evolved gas is sufficient to produce a visible bubble. Similarly, the membrane filter test [1] requires an incubation period of 20 hours to allow the development of visible colonies. Almost all the time required for either of these tests is spent in waiting for the tremendous amount of bacterial reproduction which must occur to produce the necessary visual evidence.

It is unlikely that any great increase in bacterial generation rates can be induced. Any significant reduction in time required for bacteriological analysis, therefore, must be achieved through the development of more sensitive means for detecting bacterial metabolism. The authors have been working toward this goal through the use of radioisotope technics.[3, 4]

Radioisotope detection instruments are capable of sensing particles many trillions of times smaller than a bacterium. If bacteria would incorporate unstable atoms, radiation from the harvested cells or from their metabolic products would indicate the presence of the bacteria. Isotopes have been used

Mr. Levin is civil defense representative, District of Columbia Department of Public Health. Mr. Harrison is bacteriologist; Dr. Hess is professor of biochemistry; and Mr. Gurney is research associate, Georgetown University School of Medicine, Washington, D. C.

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to study metabolic pathways of various compounds and elements assimilated by large numbers of bacteria.[5]

If selected isotopes in quantities sufficient for subsequent detection were assimilated by small numbers of bacteria, a rapid method for bacterial determination might result. For example, if coliform organisms would ferment lactose made radioactive by the substitution of a carbon atom with carbon-14, the carbon dioxide evolved by the cells should be radioactive. Calculations based on reported respiration rates of E. coli[6] indicated that the method was feasible. Since the fermentation of lactose with the production of gas containing carbon dioxide is the standard method[1] presumptive test for coliform organisms, the radioactive technic should therefore fulfill the requirements for that test.

Experimental work was begun designed to test the feasibility of the proposed method. Since the approach represented a departure from orthodox bacteriological procedures, emphasis to date has been on questions of practicality and economy—statistical and quantitative aspects have not been stressed. In the year and a half since laboratory work began considerable changes and refinements have been made in the method.

As last reported,[4] apparatus for the method consisted of two test tubes connected in series with a tube of glass beads and a paper fiber pad holder to form an air train. Air from the laboratory supply was metered by a valve controlling the bubble rate in the first tube. The air was introduced into the second tube through a fritted glass diffuser. This tube contained standard[1] lactose broth made with 1-C^{14} lactose[7] obtained from the National Bureau of Standards. Upon leaving the second tube the air passed through the glass beads (to remove any air-borne lactose droplets) and escaped to the atmosphere by passing through the paper fiber pad. When a test was made a membrane filter, through which water suspected of containing coliform organisms had been passed, was immersed in the tube containing the lactose broth, and the paper pad was impregnated with a saturated solution of barium hydroxide. The tube containing the membrane filter was incubated at 37° C and aeration was maintained. If coliform organisms were present, $C^{14}O_2$ was evolved and carried in the air stream. Upon meeting the barium hydroxide solution, the $C^{14}O_2$ precipitated on the pad as barium carbonate. The pad was replaced at intervals, and the exposed pads dried and counted for radioactivity in a gas-flow Geiger counter. A significant level of radioactivity in the pad constituted a positive presumptive test for coliform organisms.

Results of tests with this apparatus were highly encouraging, frequently producing results within one hour even when the total inoculum was of the order of 100 cells. Several aspects of the test warranted further refinement. Barium hydroxide impregnated pads through which air from sterile controls passed became radioactive, indicating that radioactive gas of nonmetabolic origin was evolved by the lactose itself. It was, therefore, necessary to subtract the radiation level of the sterile control from the radiation level produced by the test. The nonmetabolic evolution of radioactive gas masked the test somewhat by increasing the time necessary for the radioactivity of the test to reach a significant level. Another masking factor was the solubility of carbon dioxide. A substantial amount of the radioactive carbon dioxide evolved by the test organisms was held in solution in the lactose broth, again delaying the point of determination. An additional important consideration was the economic one, in that the 1-C^{14} lactose was quite expensive.

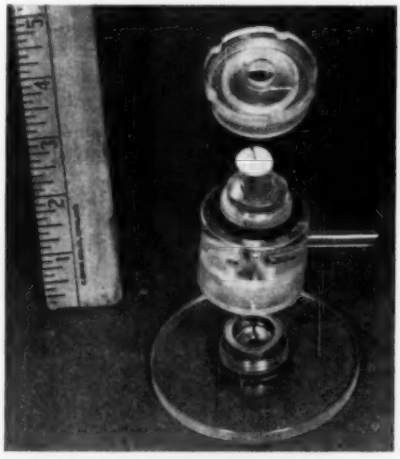
A great deal of work was done in

trying to reduce the nonmetabolic evolution of radioactive gas from the 1-C^{14} lactose. It seemed likely that there were two principal sources of this evolution. One was that oxidation-reduction reactions involving the lactose might have been induced by the presence of various metallic ions in trace amounts. Such ions could have been introduced into the lactose by the walls of the glass vessels in contact with it. The second source was the destruction of chemical bonds of the lactose by radiation from its own disintegration. Such self-induced degradation of radioactive organic compounds has been reported.[8] This type of decay could account for a substantial portion of the nonmetabolic radioactive gas.*

Tests showed that the nonmetabolic evolution of radioactive gas was, as might be expected, roughly proportional to the volume of 1-C^{14} lactose broth producing it. The other problems cited above were also related in direct proportion to the volume of 1-C^{14} lactose broth—the amount of $C^{14}O_2$ retained in solution and the cost of the test. On the other hand, the objective of the test, the production of $C^{14}O_2$ by metabolic activity of coliform organisms, was independent of the volume of the medium, provided the volume was not reduced below the very small amount necessary to sustain the cells. A major reduction of the quantity of radioactive medium used in the test was indicated.

Originally the test had been run in 10 ml portions of 1-C^{14} lactose broth. At the time of the last report [4] the volume had been reduced to 5 ml to conserve the isotope. Now, however, a true semimicro technic was desired. Tests showed that the glass-bead vapor trap was not necessary. Moist paper pads were placed very close to portions of aerating 1-C^{14} lactose broth and no trace of lactose was found on the pad by chromatographic or radioactivity tests. This presented the possibility of consolidating and reducing the size of the apparatus. One difficulty was the impracticality of aerating small quantities of medium with fritted glass diffusers. It was believed that if the depth of 1-C^{14} lactose broth over the organisms was very shallow the $C^{14}O_2$ evolved would diffuse to the surface rapidly. Air blown across the surface of the broth could carry off the $C^{14}O_2$ as it emerged and the concentration gradient of the gas would be maintained in the

Figure 1—Detection Unit



Close-up of base with planchet inserted, middle section showing air-injection tube (fine holes in end of tube direct air downward to surface of radioactive lactose broth in planchet), paper fiber pad, and top section. For test 0.1 ml 1-C^{14} lactose broth is pipetted into planchet; membrane filter containing organisms or inoculum of organisms is placed in the broth; one drop of barium hydroxide solution is added to pad; and unit is assembled. Air hose is connected and unit immersed up to top of base section in 37° C water bath. Vertical wire and hole in planchet were necessary to produce "exploded" view. Scale is in inches.

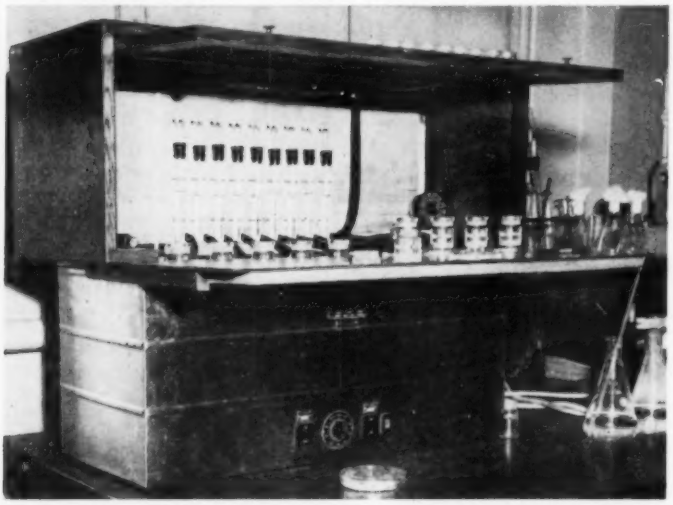
* Personal communication, B. M. Tolbert, Radiation Laboratory, University of California, Berkeley, Calif.

direction that would remove it from solution.

The apparatus developed was similar to, but larger than, that shown in Figure 1. The 1-C^{14} lactose broth was placed in the bottom section in a small cup, or planchet, of the same type used in the counting apparatus.[4] The bacteria were inoculated into the broth by the addition of 0.1 ml of a culture suspension or, in the case of a water sample test, by the immersion of a membrane filter through which the suspected sample had been filtered. Air, introduced through the middle section, was blown downward over the surface of the broth when the sections were fitted together. The paper fiber pad, impregnated with saturated barium hydroxide solution, was held in the top section. By removing the top section the pad could be changed at desired intervals, dried for 10 minutes, and counted for radioactivity. Five-minute counts were sufficient for the accuracy required. When tests were being made the unit was immersed in a water bath incubator to the depth of the bottom section. The apparatus reduced the amount of 1-C^{14} lactose used per test to 0.8 ml.

Some extremely interesting test data were obtained. The literature [6] had indicated that the respiration rates of E. coli were approximately the same, whether the organisms were in the lag phase or in exponential growth. In view of this no attempt had been made previously to control the growth phase of the test organisms, though with few exceptions, the cells had been in exponential growth at the time of inoculation. This was because the organisms were grown in nutrient culture until desired concentrations were attained as indicated by optical density tests. When this occurred the organisms were in ex-

Figure 2—Battery of Detection Units (Five in Water Bath, Four on Operating Shelf.)



A manifold supplies laboratory compressed air to each of the units through individual needle valves and bubble meters (the vertical test tubes). A blower-exhausted hood (door shown open) made from a bookcase section encloses the surface of the water bath incubator.

ponential growth. Portions of the culture were quickly diluted to obtain the cell population range selected for the tests. When placed in the broth the organisms continued growing exponentially as indicated by the logarithmic increase in the amount of radioactive carbon dioxide produced with time. Since it is believed that the radioactive method can provide more exact respiratory data than classical methods, particularly in the largely unexplored early minutes of incubation, tests were made of small numbers of organisms inoculated in the lag phase. Organisms present in a sample of drinking water or raw water are likely to be in lag phase and thus the tests would more closely approximate actual conditions under which the method would be used.

In one instance a dilution of E. coli cells was made from an 18-hour nutrient broth culture. The suspension was chilled for three hours at 5° C to induce lag. Similarly chilled sterile tap water was then used to make 10^8, 10^9, and 10^{10} serial dilutions of the suspension. Cell populations of the dilutions were determined by plate counts, the results of which were not known until 24 hours after the test. Into each of four planchets was pipetted 0.8 ml of sterile 1-C^{14} lactose broth. The lactose broth contained 0.3 per cent of 1-C^{14} lactose, the specific activity of which was 3.01 microcuries per milligram. Thus, 7.2 microcuries were contained in each planchet. To each of three of the planchets 0.1 ml of the chilled bacterial suspension was added. The fourth received 0.1 ml of sterile tap water and was maintained as the control. When the inoculations were made the units containing the planchets were simultaneously incubated at 37° C under constant aeration at a rate of three bubbles per second. The barium hydroxide treated pads were replaced every 10 minutes. Table 1 shows the results obtained. In 10 minutes the amount of $C^{14}O_2$ collected from each of the cultures was sufficient to determine that the presumptive test for coliform organisms was positive. The plate counts subsequently revealed that the numbers of organisms present in the test portions

Table 1—Presumptive Test for E. coli in Lag Phase

	Radioactivity *—(cpm †)							
	Approximate No. of Cells							
	115		40		20		Control	
Time (Minutes)	Increment	Cumulative	Increment	Cumulative	Increment	Cumulative	Increment	Cumulative
10	65	65 ‡	83	83 ‡	72	72 ‡	17	17
20	35	100	33	116	37	109	12	29
30	32	132	36	152	26	135	15	44
40	34	166	34	186	41	176	11	55
50	25	191	19	205	17	193	7	62
60	29	220	31	236	30	223	8	70

* Radioactivity is measured above a background of 20 counts per minute.
† The abbreviation cpm stands for counts per minute.
‡ Point of presumptive test determination.

of the 10^8, 10^9, and 10^{10} dilutions were of the order of 115, 40, and 20 cells, respectively. A duplicate run, made with approximately 20, 15, and five cells in lag phase, also produced 10-minute determinations in each of the three populations as shown in Table 2.

Other runs, however, have taken as long as four or five hours to produce positive results. Contrary to what was first expected the time required for positive results was consistantly longer when the E. coli were in exponential growth than when they were in lag phase. An example of such a run which also was one that produced comparatively late results is shown in Table 3. In this case an exponentially growing culture of E. coli in lactose broth was serially diluted 10^5, 10^6, and 10^7 times. Lactose broth was also used as the diluent in order to maintain the cells in logarithmic reproduction. The suspensions were not chilled but, immediately upon preparation, 10 ml of each were filtered through a membrane filter. Each filter membrane was then immersed in a planchet containing 0.9 ml of the 1-C^{14} lactose broth. A fourth 0.9 ml portion of the broth was maintained as a sterile control. Plate count determinations subsequently revealed that the 10^5, 10^6, and 10^7 dilutions contained approximately 13,000, 4,800, and 1,680 cells for the respective 10 ml filtered portions. The test was considered positive for the 13,000-cell culture in 30 minutes, for the 4,860-cell culture in 120 minutes, and not until 240 minutes for the 1,680-cell culture.

Several observations are worthy of note. The high rates of $C^{14}O_2$ production seem to occur initially and then fall off in the lag phase organisms. The evolution of $C^{14}O_2$, as measured by counts per minute evolved per cell per hour, is much higher for lag cells than for exponentially growing cells. This measurement is also considerably higher for cells in low concentrations than for those in cultures where the total populations are higher. In some runs there have been periods during which the $C^{14}O_2$ production of the test samples dipped significantly below that of the sterile control. One hypothesis that can

Table 2—Presumptive Test for E. coli in Lag Phase

	Radioactivity *—(cpm †)							
	Approximate No. of Cells							
	20		15		5		Control	
Time (Minutes)	Increment	Cumulative	Increment	Cumulative	Increment	Cumulative	Increment	Cumulative
10	73	73 ‡	18	18 ‡	39	39 ‡	1	1
20	20	93	20	38	80	119	0	1
30	0	93	9	47	1	120	0	1
40	2	95	6	53	0	120	0	1
50	0	95	1	54	0	120	0	1
60	3	98	22	76	21	141	0	1

* Radioactivity is measured above backgrounds ranging from 19 to 28 cpm.
† The abbreviation cpm stands for counts per minute.
‡ Point of presumptive test determination

relate these seemingly anomalous findings is that reproducing cells and cells preparing to reproduce incorporate or conserve large quantities of CO_2 for use in building cellular material. Lag phase cells might not exert such a CO_2 demand.

Minute gas leaks which developed in the handmade apparatus frequently marred test runs by allowing $C^{14}O_2$ to escape without passing through the paper fiber pad. Also, tests showed that there was room for further reduction in the quantity of 1-C^{14} lactose required per test. The latter would reduce the cost and at the same time increase the sensitivity by lowering the rate of nonmetabolic evolution. The development of smaller, gas-tight apparatus was needed. In addition, the possibility of utilizing the Robinson gas-flow counter [9] seemed promising. By virtue of its small counting chamber volume the background of the counter averaged approximately five to six counts per minute compared to the 20 to 25 counts per minute background of the counting apparatus then in use. This considerable reduction in background would allow low-level test emissions to become significant earlier since significance is based on the ratio of the test to the control level. A modified Robinson gas-flow counter manufactured at the National Institutes of Health was made available by the Public Health Service. It is operated in the proportional region and is used with a commercially available scaler equipped with an amplifier.

The radioactivity counting equipment is shown in Figure 3. The apparatus shown in Figure 1 was designed around the half-inch planchet used by the Robinson counter. The same type of planchet is used to hold the bacterial cultures as is used to place the radioactive paper pads in the counting chamber. Machined of plexiglass the sections of the unit fit together with screw threads and rubber o-ring gaskets. Paper fiber pads and membrane filters

Table 3—Presumptive Test for E. coli in Exponential Growth

	Radioactivity *—(cpm †)							
	Approximate No. of Cells							
	13,000		4,800		1,680		Control	
Time (Minutes)	Increment	Cumulative	Increment	Cumulative	Increment	Cumulative	Increment	Cumulative
30	24	24‡	12	12	2	2	12	12
60	20	44	11	23	0	2	9	21
90	46	90	17	40	1	3	14	35
120	124	214	46	86‡	3	6	17	52
150	377	591	51	137	13	19	26	78
180	577	1,168	51	188	32	51	15	93
210	1,847	3,015	85	273	50	101	24	117
240	2,600	5,615	120	393	102	203‡	16	133

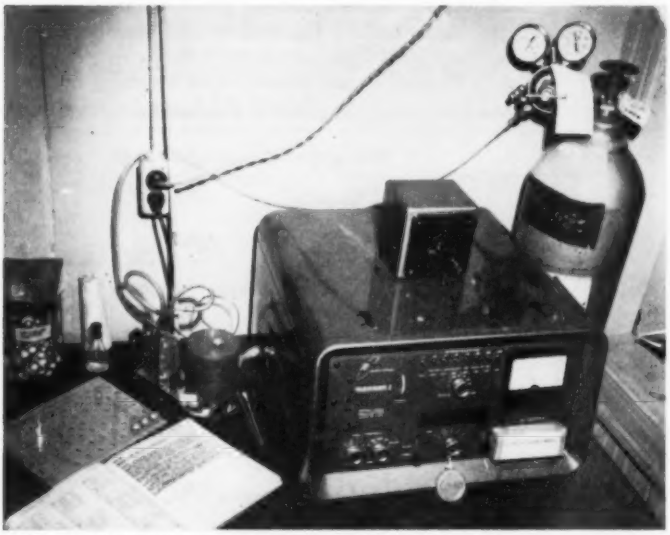
* Radioactivity is measured above a background of 23 cpm.
† The abbreviation cpm stands for counts per minute.
‡ Point of presumptive test determination

were obtained in the half-inch size. The pads are made of the same stock as are nutrient pads used in the membrane filter technic. Syringe adapters are utilized to force several milliliters of bacteria-containing water through the filters. As previously, the filter membranes are then placed in planchets containing 1-C^{14} lactose broth. The planchets are fitted into the bottom sections of the apparatus. Paper fiber pads are placed in the top sections and moistened with one drop of a saturated solution of barium hydroxide. The unit is then assembled and placed in the water bath. There are two tops for each unit so that the whole section can be replaced, reducing the delay formerly experienced in changing the pads.

The new apparatus (Figure 1) requires only 0.1 ml of 1-C^{14} lactose per test. This is a 100-fold reduction over the quantity originally used, and a 50-fold reduction since the last report.[4] The per test cost has been reduced by the same amounts since the chief cost is the isotope used.

At the present time the National Bureau of Standards is the only source of 1-C^{14} lactose which is synthesized on a small batch basis. Total costs in producing the 1-C^{14} lactose are such that the radioactive method can compete favorably on a commercial basis with the standard method test. The amounts and activity levels of the 1-C^{14} lactose used do not require special safety precautions other than the ordinary exercise of care. The hood (Figure 2), while not needed to meet exposure limits,

Figure 3—Radioactivity Counting Equipment



The Modified Robinson gas-flow counter is directly below the electrical outlet. A planchet with exposed pad is shown in base plate of counter prior to being rotated into counting chamber. Binary scaler with built-in amplifier is right of counter. Unit on top of scaler is preset timer. Tank to right of scaler supplies counter with gas. The equipment is operated in the proportional range. Beaker at left of picture contains counted pads and planchets ready for disposal.

was constructed on the assumption that even very small amounts of radiation should be avoided if possible.

Several important problems remain to be solved in the rapid presumptive test for coliform organisms. The reason for the apparent biological vagary of the cells in low concentration must be explored. Otherwise, the fact that occasionally low numbers of organisms require several hours to produce positive results will require that samples yielding negative results be monitored for a like period of time. The difference in rates of CO_2 production and incorporation or retention between lag and growth phase organisms requires investigation. Unless this phenomenon is understood it will be difficult to quantitize the test.

Some poisons, in proper concentration, are known to prevent growth and reproduction of bacteria while allowing respiration to continue for several hours.[10] In effect, then, such poisons should prevent the CO_2 incorporation or retention, since it cannot be used to build new cellular material. The incorporation of a poison of this type into the medium might tend to stabilize the rate of CO_2 production at the high lag phase level. It is possible that the poison would also reduce the variation in the amount of CO_2 produced per cell per hour in high- and low-cell density tests. A high-cell density test might evolve less CO_2 due to the fact that the CO_2 produced may be incorporated by nearby organisms. Blocking of the incorporation could produce the equalization of rates.

The new apparatus has only very recently been obtained, but it has been used for several experiments designed to test this possibility. The poison selected was 2,4 dinitrophenol which was added to the 1-C^{14} lactose broth. Equal inocula were added to culture planchets containing the poisoned broth and to culture planchets containing broth without poison. The few tests made showed considerably higher rates of $C^{14}O_2$ evolved in the poisoned cultures than in the controls.

One factor which complicates quantitizing is the difficulty of knowing the exact number of organisms actually present in a calibration run. Regardless of the method used, tests of aliquots of low-population density inocula do not indicate with sufficient accuracy the numbers of organisms in a test portion. One method considered for solving this problem was to continue to incubate the membrane filters used in the radioactive test until colonies appeared. The gas evolved in the rapid test could be correlated with the number of colonies that subsequently appeared. The assumption would be that the number of colonies was the same as the number of cells originally present. This, too, has limitations in that organisms may live for several minutes or hours evolving detectable amounts of radioactive carbon dioxide and yet die without giving rise to a colony. This would be particularly true if a poison should be incorporated into the 1-C^{14} lactose broth.

Discussion

In its present state of development the radioisotope method can be relied upon for rapid qualitative presumptive determinations of gross coliform contamination. Positive results have been obtained from very small numbers of organisms after as little as 10 minutes of incubation and a total elapsed time of 25 minutes. However, there have been times when the determination for small numbers of cells has taken several hours. More research is needed in order to determine the reasons for and to attempt to control this biological vagary.

Variations in quantities of $C^{14}O_2$ produced per cell per hour pose a problem in quantitizing the test. If the rate of CO_2 evolved by coliform organisms can be made reasonably uniform, it will be

possible to obtain a quantitive determination without resorting to testing numerous replicates of various dilutions as is required in the standard method test. A significant factor in the variability of CO_2 production rates may be incorporation or retention of the gas by cells reproducing or preparing to reproduce. The use of poisons to prevent the incorporation or retention is being investigated.

Since the project began, the amount of 1-C^{14} required per test has been reduced to the point where the radioisotope method can compete economically with the standard method. Radioactivity counting equipment required by the method represents an initial investment of approximately one thousand dollars. The technic is simple and safe. Two important items, the Robinson gas-flow counter and the 1-C^{14} lactose, are not commercially available at the present time.

The possibility exists that the method can be made confirmatory for coliform organisms. Use of radioisotope technics should also yield rapid determinations for other types of organisms by proper design of the test methods and media. In addition to water bacteriology, application of such methods should be practical in milk and food quality control and other public health work. It is also believed that a rapid method may be developed for total bacteria determinations. The latter would have important civil defense implications as a means for detecting bacteriological warfare.

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Safety and Health

NED H. DEARBORN, Ph.D.

The similarities in the public health and public safety administrative programs are pointed out here to suggest the areas in which collaboration should prove mutually profitable.

Industrial health and hygiene have been in the charter of the National Safety Council since its inception in 1913. Safety engineers in industry have been concerned with industrial hygiene as well as with industrial safety. Indeed, in some smaller plants of smaller companies, the safety engineer and the industrial nurse comprise the health and safety team. Larger corporations have, of course, industrial health departments, headed by a physician and staffed by physicians and nurses. In some instances the safety department reports to and is responsible to the industrial health physician, while in other instances the safety department and the health and hygiene department are linked as a coordinated team. In the enormous growth of our industrial economy the two factors of health and safety have been closely linked, mutual interests explored, joint activities carried out, and workable patterns developed. The well-being of the worker (whether blue shirt or white collar) is of primary importance to top management.

My purpose is not to describe programs for industrial health and safety. It is, rather, to talk with you briefly about the safety movement and to call your attention to one or two developments which I foresee as looming ever larger and larger on the horizons of the future. I am told that it is the current fashion in public health circles to eschew the word "safety" and to use instead the term "accident prevention." This strikes me as somewhat akin to using the term "disease prevention department" in place of the usual term "public health department." I suspect that public health departments would not long have flourished had the term "disease prevention" been fastened around their necks.

No, just as the term "health" means far more than simply the absence of disease, so too "safety" has broad implications. "Health" is a positive concept and it carries with it in almost everybody's mind the positive connotations of the joy of living and well-being. The old English phrase, "Hale and hearty," has in it something of this larger meaning. The same thing is true of the word "safety." The idea of accident prevention is essentially a negative concept but "safety" is positive. Safety means doing things—but doing them the right way. Industrially speaking, safety means efficient production. Highway safety implies efficient transportation of goods and people. Home safety implies better living in better homes. Or, putting it another way, safety enables us to enjoy the well-being that good health gives us. Safety en-

Dr. Dearborn is president of the National Safety Council, Chicago, Ill.

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ables us to focus the energies of good health into useful and purposeful living. And finally, if there is to be any meaning in the term at all, safety means interest in the welfare of others.

When we begin to look at the problem of accidental injuries and death in these terms, we see that it is possible to have a good community safety program only if we have safety in all fields: not only at work, but also safety at play, safety at home, safety on the highway. To me it seems most unwise for an industrial plant to spend many thousands of dollars a year on safety education and safety engineering within the plant, if the workers are going to be killed and injured on the streets and highways coming to and from work, or in their homes, or in the public parks, playgrounds, beaches, and other community recreational facilities. The injured worker is just as much a loss to the plant production, whether he is crippled outside of the plant or within.

Some large corporations are beginning to realize this and are taking steps to reduce off-the-job injuries. The DuPont Company, for example, Union Carbide and Carbon, American Telephone and Telegraph, or the New York Central Railroad are only a few of the large companies that are making a determined attack upon the problems of off-the-job safety. We have recently devised a reporting system for off-the-job injuries, and presently some 70 companies are reporting the off-work injury experience of a quarter million employees. This reporting system has been established for less than a year, and month by month new companies come within the program. We expect that this considerable volume of experience will prove extremely useful in the detailed planning of safety programs. The conclusion that I want you to draw is this: industry is, more and more, becoming aware of, and taking an active part in, community safety problems. You public health officers who are planning safety activities and programs will more and more be able to draw upon the industrial leaders in your communities for support.

Yours is a difficult profession, for the better the job you do, the more the general public takes for granted, tending to forget about the years of patient accumulation of knowledge, the years of training and experience demanded, the selfless dedication to a task of public service. Frequently when I turn on the tap to get a drink of water the thought occurs to me how much we take for granted the purity of our water supply. And not only this, we take for granted a great many other public health matters that a couple of generations ago were of intense personal concern to fathers and mothers interested in safeguarding the health and welfare of their families. The dreaded diseases of smallpox and diphtheria have been brought under control. Tuberculosis is rapidly yielding. A single reported case of typhoid fever immediately calls forth into action a whole crew of trained investigators. And the ordinary citizen takes all this for granted.

So too, people take safety for granted—until a Boston night club fire, a collision of two airplanes over the desert, a sinking of a luxurious ocean liner remind us all how safety is in reality the interlocking of many forces and factors. Take one of these interdepartmental parts away, and you have the makings for a possible disaster. And from disaster there follows a wave of public protest expressed in the passing of new laws and regulations often hastily conceived and ineffectual.

Let me give you an example from the field of home safety. A few years ago some small boys were seriously burned playing around a bonfire. They were wearing cowboy chaps. The chaps were decorated with a fuzzy textile made to look and feel like lamb's wool. But

the fuzzy material was of brushed rayon and was exceedingly flammable. And so, because of the widespread publicity several states hastily enacted statutes prohibiting the use of textiles for clothing that were more inflammable "than ordinary cotton." (That was, I am told the exact wording of the statute.) But ordinary cotton treated how? Spun into heavy tight threads and closely woven to make canvas? Or loosely woven and with a fluffy nap like flannelette? The law soon proved unintelligible and unenforceable. And so began a long series of carefully conducted studies running over a period of years on the testing of the flammability of textiles. Safety people were glad to be of help on these tests.

My point is this, it often takes a disaster to make us think of safety. And having hastily thought of safety, we sometimes act as though passing a law was the answer to the problem. But you in public health know better. You know that the careful tracing out of cause and effect may require years of patient endeavor. You know that a jump to conclusions may land you "in the soup." And even when you have your evidence and the logic of the facts is incontrovertible, you know that still a thorough job of public education must precede any attempt to depart radically from accepted thinking. The difficulties in some communities over the fluoridation of the water supply is a case in point.

In industrial operations we learned that the right way to do something was also the safe way. Hence safety became an integral part of efficient production. The increase in the number and use of automatic machines will undoubtedly result in fewer workers being exposed to possible danger and hence—in all probability—fewer injuries. Or it may be that automation will bring with it a whole host of new hazards. Certainly atomic power has evoked new hazards. Before, say, 1940, not many of us were even aware of, let alone familiar with, the many dangers of radiation.

The automobile is both a health problem and a safety problem. The automobile has been so thoroughly accepted and widely used that our city streets are lined with cars. During rush hours they stand bumper-to-bumper. And we are learning that a multiplicity of cars and engine exhaust may, under certain atmospheric conditions, become a serious detriment to health. Los Angeles seems to be climbing out of a bad traffic safety record and climbing right into the hazard of smog. The pedestrian just cannot win, can he? If he does not get knocked down, he gets choked!

We do not know yet how serious may be the health hazards from a constant exposure, year after year, to smog. We do know what happened at Donora, Pa., in October, 1948. We do know what happened in London about a month later in the same year of 1948. Will it take another disaster with hundreds or thousands dying to awaken us fully to the danger of sudden death from atmospheric pollution?

Now, I want to mention briefly what may be called the "near miss"—or the accident that just did not happen. On several occasions in Chicago many hundreds of women have complained that their nylon stockings suddenly disintegrated. It made a good newspaper story. We may laugh at these occurrences and pass them off as a great joke on feminine foibles, but are not such occurrences really warnings? Do we know the atmospheric conditions and the type of pollution responsible? Do we know the possible effects on human tissues?

In industrial operations the alert safety engineer is as keen to study the "near miss" as to study actual accidents. The "near miss"—when injury was narrowly averted—is a clear indication that

somebody has been doing something the wrong way. My friend and fellow worker in safety, Dr. Herbert J. Stack, may wish to mention the subject of "near misses" in the field of traffic safety. At any rate, he will agree that if we had complete and thorough studies of those accidents that just did not happen, we would have a great deal of effective material for highway safety.

The ordinary person thinks of an accident as something that happens suddenly. The situation suddenly is out of his control: the cable on a cargo sling begins to slip, or the child dashes out into the street in front of his car, or the stepladder on which he is perched begins to wobble, and so on. But health workers as well as safety workers know that usually these occurrences do not just suddenly happen. The causes may be built up slowly, just as the causes of disease may be built up slowly. The onset of tuberculosis, let us say, may seem sudden to the patient, but a regular semiannual checkup would have revealed the situation long before the patient was aware of it. The industrial worker on a punch press may have fallen into the bad habit of locking out the guard on his machine in order to increase his daily output. But regular daily checkups by a diligent and alert foreman should reveal these hazardous shortcuts. Irritations and frustrations may have accumulated in the worker's mind until he is ready to explode and take out his annoyances either on himself or on some fellow worker. The supervisor who has been trained in human relations and who has learned to spot symptoms, may not be able to effect a cure but at least he may be able to head off personal injury or property damage by sending the man to the medical office.

Now, I have hinted at two things which are of special interest to you as health officers—periodic checkups and mental health. I am glad to see the increasing interest in these matters by health people. Those of you who have attempted mass x-ray programs have, I believe, usually found top management in industry extremely cooperative. Likewise, management is taking an increasing interest in mental health. In both of these fields industry needs and would welcome the help of the public health physician.

There is not time to touch upon all of the areas of possible cooperation and coordination of effort. But I do want you to take away from this session the idea that each of us can learn from the other. With the formation of a new unit in the Public Health Service under Dr. James Goddard, I suspect that stimulation of interest is now no longer necessary. You are interested. Perhaps your very presence here is proof enough. The time now is ripe for cooperative development of program.

I have tried to point out similarities. Health is a positive concept. Safety is likewise. Much of the effectiveness of public health programs depends upon digging out the facts, putting them in order, and embarking on a public education program to gain individual and group acceptance. Safety, when it is effective, follows this same process. Public health personnel are attuned to periodic checkups. Safety literally depends upon such checkups. Public health personnel are even now attempting to anticipate new health problems in an expanding and dynamic America. If we cannot succeed in keeping our fellow citizens alive and well (through man's allotted years on this earth) then America will not be the expanding, dynamic country we would like to make it. I believe that you in public health have only to ask in order to receive enthusiastic program cooperation from industry—from top management down to the working supervisor.

The Rome Meeting of the International Union for Health Education of the Public

CLAIR E. TURNER, Sc.D., Dr.P.H., F.A.P.H.A.

Most of us are health educators—either by intention or of necessity. So others than those of us who listened to this postprandial talk should find satisfaction in its recital of world-wide progress in inducing people to lead healthier lives.

Because of its vigor, professional quality, magnitude, and world scope, the Third Conference of the International Union for Health Education of the Public in Rome, April 28 to May 5, 1956, was a highlight in the present health education picture. With more than 1,000 registrants from 57 countries it was also a highlight which threw its rays on both the past and the future.

In this country sanitation and communicable disease control have changed from policing to educational procedures. Health education has produced the kind of public which gave two million permits for the trial of the Salk vaccine. Both teamwork in health education and a profession of health educators have developed. These changes have not been duplicated elsewhere, but the Rome conference showed that every country, whether advanced or retarded, is moving forward in health education. No country believes it can have good public health without health education.

A word about the Union. Organized in 1951 on French initiative it is nongovernmental, but it has been accepted into official relationship by the World Health Organization. It was founded in the belief, long accepted in this country, that voluntary agencies and all health workers, educators and community leaders, outside the government as well as inside, have a responsibility for the health education of the public. In this connection Dr. V. A. Sutter, assistant director-general of WHO, said in Rome, "It is apparent that in national and international terms there is a great need for educational work in health matters to reach the total population. The need is so vast that the collaboration and development of health education activities with non-governmental auspices is not only desirable but very essential. Realization of this need for collaboration is one of the underlying reasons why the World Health Organization welcomed the initiative taken in 1951 by leading health educationists in France which resulted in the creation of the International Union for Health Education of the Public as an international non-governmental organization."

The Union was founded upon certain other beliefs which you share: the belief that society has a primary obligation to give everyone, everywhere, the available and usable knowledge for the protection of his health; the belief in the tremendous value of informed and

Dr. Turner is assistant to the president, National Foundation for Infantile Paralysis, New York, N. Y., and chief adviser for the International Union for Health Education of the Public.

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intelligent effort within families and community groups in behalf of their own health; the belief that health is a common quest which can help unite the entire brotherhood of man, regardless of color, culture, or religion; and the belief that world effort in helping peoples to help themselves to health can significantly promote international understanding.

The active members of the Union are national organizations that include health education in their activities. Associate members, with all privileges except a vote in the assembly, are individuals, schools, local associations, and groups in public health, education, community service, industry, or labor. The Union acts primarily through conferences, committees, and publications. It has already stimulated the development of national committees in many countries to the great advantage of health education.

But let us look at the Rome meeting, which in facilities, arrangements, and in the hospitality and graciousness of our hosts has set a standard difficult to equal. The conference was under the high sponsorship of the president of the republic. Arrangements included a formal opening ceremony in the palatial Capitol Building attended by leaders in national and city government who joined the Italian National Health Education Committee in extending a cordial welcome. The remaining meetings were in a magnificent exposition building with every convenience. Excursions were arranged to a national health education demonstration and to many other places of interest. The Pope gave a special audience to members of the conference. The wife of the president of Italy honored the conference with a visit. The president himself was abroad at that time. Multilingual registration facilities were provided and a daily bulletin was issued in French, English, and Italian.

Hospitality included a general reception at the famous Castel St. Angelo, a reception by the mayor of Rome at the Capitol, a splendid concert at the Tiatro Valle, and a reception by the president of the provincial administration of Rome at Palazzo Valenti. The French Embassy and the Egyptian Embassy both held special receptions. Visits were arranged to health and educational activities and special social functions and excursions were provided for the ladies each day. A formal dinner was tendered to members of the Executive Committee and their wives. Our hosts not only provided some 25 silver cups and many diplomas for excellency in films and exhibits, but also medals of honor for the officers of the Union, who were also given private automobile service throughout the conference.

Language is always an interesting problem at international meetings, with humorous as well as serious aspects. I am reminded of the man who said to his interpreter concerning group discussion, "Don't worry about the first of a speech until the speaker says but, or mais, or pero, or aber, then please begin the most careful translation." One Italian friend told me of an interesting language incident when Mrs. Luce came to Rome as our ambassador. You know that in Italian L-u-c-e is pronounced "luchee" and the Italians wondered whether Luce was perhaps feminine for Il Duce. Acquaintance with Mrs. Luce promptly dispelled their fears.

Our plenary sessions in the auditorium of this large palace for international meetings had simultaneous translations in French, English, Spanish, Italian, and German. Work sessions were primarily in English or French with special translations as needed. The program of the conference had six major elements—an exhibit, a series of film showings, an official banquet, plenary sessions, work group sessions, and business sessions.

The exhibit from a score of countries

had many unusual elements. For example, the League of Red Cross Societies had written to every Red Cross Society in the world asking each to send an exhibit of local health education activities to Geneva, and these materials were organized into a single world Red Cross exhibit. Both governmental and voluntary agencies from both sides of the Iron Curtain sent material. The director of the health education center in Moscow and her associates brought a carefully made exhibit from Russia.

This country sent an appreciable amount of exhibit material. Following initial action by the Society of Public Health Educators an Exhibit Committee was established, representing the American School Health Association, American Association for Health, Physical Education and Recreation, American Public Health Association (Public Health Education Section and School Health Section), Conference for Health Council Work, National Conference for Cooperation in Health Education, National Health Council (Committee on Health Education), and the National Safety Council.

Twenty-three national organizations sent exhibit materials; seven of these submitted health films. Ten publishers sent books on hygiene or health education and in each case it was agreed that all books displayed at the conference would be retained by the Italian Health Education Committee for its national library.

A special composite exhibit was prepared to show the development of local programs in health education. Thirty agencies participated in this exhibit, representing all parts of the country. Because "the development of cooperation in community programs of health education" was one of the important topics in the conference, this exhibit was called to the special attention of the study groups. It also received an award with highest honors from the conference. Ben Kinningham of the Illinois Tuberculosis Association was particularly helpful in Rome in arranging American exhibits.

Over 80 films were submitted from a dozen or more countries and these were shown publicly in a separate hall during the afternoons while work groups were in session. Dr. W. W. Bauer of the American Medical Association served as chairman of a committee of judges to select the best films. The official banquet at the Grand Hotel was a significant affair, preceded by an informal reception. Sally Lucas Jean was the guest of honor and was awarded the first medal of honor to be issued by the Union.

In the plenary sessions there was a principal speaker from France, from the United States, United Kingdom, Italy, Uruguay, West Germany, and Russia. In addition, there were some 20, 10-minute reports from other countries on their progress in health education. Both the principal papers and the brief reports were so stirring that you will want to read them in the report of the conference (which the Italian committee proposes to publish) or in the bulletin of the Union.

The speaker from the United States was Basil O'Connor, president of the National Foundation for Infantile Paralysis, who was honored by the Union with a diplome d'honeur for his distinguished leadership of a voluntary agency. We Americans were also very proud of our fellow countryman, Miss A. Helen Martikainen, who spoke at the same session as a representative of the World Health Organization. We were also represented on the platform of plenary sessions by Dr. John Hanlon and Miss Jean who served as vice-chairmen.

Work sessions were organized on the following topics:

1. What are the needs and procedures for developing cooperation in local programs of health education of the public?

2. How do we adapt health education methods and materials to different population groups?
3. What preparation in health education of the public is needed in the professional education of health personnel and of educational personnel?
4. What should be the health education activities in schools?
5. Health education in the prevention of accidents.
6. Health education and the problems of mental health.
7. Health education in the prevention and control of social diseases.
8. Health education and nutrition problems.
9. Health education and the problems of environmental sanitation.

For topics 1–4 there was a work group in French and Italian and another work group in English. For each of the last items there was a single group speaking both French and English. The last two general sessions were given over to reports from these groups. The reports were presented in French or English, but were given simultaneous translation into all five languages.

Americans who participated as officers of study groups or in the presentation of work group reports and many others made significant contributions, and these discussions represented perhaps the most practical phase of the conference. Some of you, as well as health educators in many other countries, participated in the advance preparation of suggestions on these topics. The suggestions were placed in the hands of work groups in French and in English.

The business sessions were especially significant in respect to organization and the plans for the next meeting. The new president is Professor Giovanni L'Eltore of Italy. Vice-presidents were elected for the major geographic regions. The vice-president for North America, including this continent as far south as Panama, is Howard Ennes. Marguerite Vollmer is our new member on the Executive Committee.

A revised constitution and by-laws were accepted. A variety of both individual and group memberships is now established, beginning with individual general membership having dues of $10, and continuing through higher categories for either groups or individuals with more generous annual payments. Plans were made for international committees in such areas as research and professional education.

Three interesting resolutions were passed by the General Assembly: One expressed the belief that accident prevention should be included in the various national programs of health education and respectfully requested WHO to draw the attention of governments to this aspect of health education and to devote a World Health Day to the subject of accident prevention. A second resolution recognized the importance of school health education and the desirability of international collaboration in its promotion. It resolved to bring these matters to the attention of the agencies of the United Nations, especially WHO and UNESCO, and offered every possible cooperation in any undertaking. A third resolution recognized the progress of the United Nations and specialized institutions in health education associated with fundamental education. It endorsed further activity in that field and promised every possible cooperation.

And, finally, there was the question of the time and place of the next conference in 1958. The Executive Committee had considered this problem and had expressed the belief that the Fourth Conference ought not to be in Europe. It was felt that the United States would be the logical place for the next conference because of the standing of this country in public health and in health education. It was pointed out that health education is well recognized in public health administration and in school administration; that we have a remarkable development of voluntary

health agencies; that this is the only country with a considerable body of specialists in health education; and that health educators from here are being sent to many countries in international programs.

Americans at the conference discussed this question among themselves and felt that we are indeed challenged by the opportunity and our leadership obligation to invite the conference here. At their request Professor Howard S. Hoyman, the representative of the American School Health Association, moved that the choice of the time and place of the next conference be left in the hands of the Executive Committee of the Union, but that the conference should be held in the United States if an invitation is received by November 15, 1956. The motion was passed unanimously by the assembly.

The desirability of a world conference here is strengthened by the fact that the World Health Organization is to meet in this country that year and that the subject of technical discussion will be health education of the public. Incidentally, the president of the last WHO Assembly was Professor J. Parisot, honorary president of the Union, and the new chairman of the Executive Committee of WHO is Professor G. Canaperia, the first vice-president of the Union.

The assembly of WHO numbers only 300 to 400 members. A properly developed Fourth Conference of the Union should have 2,000 to 3,000 registrants. Through our close working relationship with WHO the two programs would be coordinated and many WHO delegates would also attend the conference of the Union as was the case at Rome. The voluntary agencies in safety and in such public health fields as tuberculosis, poliomyelitis, heart, cancer, crippled children, and mental health would, of course, play an important part. Governmental agencies would participate through their health education personnel. National consumer groups like the PTA, service clubs, industry, and labor would be asked to join in this undertaking.

Summary

The Rome conference reflected a spectacular vigor in the health education movement in every country around the world, regardless of its stage of development. The rest of the world is coming into a development in health promotion through education which has already gone far here and in a few other countries. The conference gave a tremendous further stimulus to the movement while at the same time revealing how much still remains to be done. The Italian National Health Education Committee, as the host in putting on such a conference, has, with all the graciousness so characteristic of the Latin races, politely laid at our feet a challenge to America to do as well. We can hardly do less than to bring together every agency concerned with health education in a national committee through which we can organize a World Conference on Health Education worthy of this great country.

Rest and Restriction: Their Conflict with an Adolescent's Development

J. ROSWELL GALLAGHER, M.D., F.A.P.H.A.

Stressed here are the values of athletics and other physical activities in the adolescent's development and the frequency with which strengthening rather than rest is a more appropriate recommendation when less than good health is encountered.

Rest and restriction of activity are prescriptions commonly given to the sick, the injured, the convalescent, and those in less than ideal health. Usually these are well chosen and because this is so, either from habit or from lack of consideration, advice of this sort may be suggested when exertion and an increase in activity would be more appropriate. This will seldom be true when one is dealing with a little child or with an adult, but it frequently applies to the adolescent, who normally is very active and goes at things strenuously. Rest and restriction from activity are contrary to the nature of adolescents and it is important to consider that strengthening, increased activity, and efforts to improve their capacity to withstand stress and strenuous exertion may be more fitting prescriptions.

Thought should always be given both to the ailment (or the desired goal) and to the person involved.[2] It is not enough to prescribe what is good, in general, for obesity or for a lame back or for fatigue. Programs for an individual's treatment should be planned with due regard to the characteristics, developmental pattern, needs and problems of the age group or person concerned. What is best for an adult's knee or fatigue or tachycardia may be very different from what will best foster an adolescent's development and at the same time relieve him of his symptom.

The part which the adolescent's physical development plays in this, though important, needs only brief mention. This age period, in contrast to childhood and adult life, is the time when strength is built. Increase in muscle mass comes late in adolescence following the spurt in height, the increase in trunk length, and the widening of the shoulder girdle.[9] The important points are that strength is something which is normally being achieved during these years (and therefore it would seem reasonable to foster it), and that it is achieved late (and therefore early in the period may not be equal to the demands put upon it). Increased rest and inactivity run counter to the normal increase in muscle strength, so when they suggest themselves to us it would seem wise to consider what might be done to avoid this conflict. There are implications here, when we consider that this age period is the one in which muscular strength is built, for encouraging an adolescent's activity, for supporting programs which increase strength, and for recognizing and attempting to combat the difference between the adolescent's actual strength and the demands he is likely to put upon it. The evaluation of strength, the determination of the disproportion between strength and probable stress, and the increase of strength through exercise can at times constitute better management than a regime which focuses upon

the ailment, emphasizes rest, and ignores the facts regarding strength development in adolescence.

Factors in personality development are equally important. Adolescence is a period of strenuous living and this and its parallel characteristic preoccupations, the quest of recognition, of acceptance by members of their own age group and of freedom from authority make it a time poorly suited to restriction. The adolescent is striving to make a place for himself in the sun. He wants to be noticed; he has little confidence so he needs to bolster himself with successes; he wants prestige and applause. These needs for success, recognition, and independence—and the heedless, reckless, strenuous way in which they are sought—obviously have both favorable and unfavorable aspects. However, the important facts are that they exist and that in dealing with young people we take them and the ends to which young people will go to achieve them into account. After all, the achievement of independence, of confidence, of sufficient security, so that one behaves in a reasonably unselfish and gentle fashion are highly desirable goals. For better or for worse the adolescent learns early that in our civilization usually one achieves these by aggressive effort. All but those few who achieve stability and security very young—or who feign indifference fearing failure if they were to venture—attack very strenuously those things which they hope will bring them prestige and concurrently resist or ignore whatever stands in their way.

To suggest rest, or that he give up an activity which would yield recognition, will frustrate and annoy an adolescent whose striving for independence makes him doubly resentful of any restriction. These in themselves are of little moment—he needs to learn to accept disappointments and restraints—but an activity which can foster the proper development of his personality by contributing to his confidence and inner security is not lightly to be denied him. On the contrary, appreciating the values which an activity, often strenuous, can bring him it is more appropriate to think of strengthening so that exertion will not cause excessive fatigue or strain than to advise inactivity. When rest is imperative, mindful of this age group's habit of living strenuously and the reasons for it, there should be serious attempts to offer alternative sources of success or at least an open acknowledgement and discussion of the unfortunate aspects of restriction.

From these comments it is evident that voluntary inactivity on the part of an adolescent should be regarded as unusual. To prefer to sit around, to give the impression of fatigue and readily to accept prescribed rest, to be submissive may, as is true of those who disdain independence, make for peace and quiet; but they are equally foreboding and should at least suggest that the adolescent's development is proceeding in an unusual way. With these young people the problem is not how to avoid restrictions, but one of determining why they avoid activity. Is it fear of failure which masquerades as sophistication or docility? Fearing to compete, not wanting independence, lacking confidence, but not seeking the successes which would bring it, we see clearly in them the normality of those ways of strenuous living which we might thoughtlessly deny others.

These remarks relate to obesity, to questions regarding the fitness of ath-

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Dr. Gallagher is chief, Adolescent Unit of the Children's Hospital, Boston, Mass.

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letes to participate, to the value of body-building and athletic programs, and to the management of fatigue, convalescence, and of young people suspected of having a cardiovascular disorder. Primarily, however, their purpose is to urge the importance of keeping in mind an age group's characteristics and the nature and state of a person's physical and personality development when suggesting ways of improving health.

When one is asked whether an adolescent's heart is fit for exercise or whether athletics are harmful for them there are two matters to keep in mind. One, the fact that adolescents go at things strenuously, and two, that adolescents need sources of success. The first demands that their hearts' fitness be evaluated under stress; the second that one does not underestimate the value which athletics have as a source of prestige and acceptance.

The question about the adolescent's heart is not being asked concerning a person who is going to play tag or is going to sit at an office desk. It is being asked about a person who is going to make an all-out effort to win, who will deny fatigue, and be willing to drop from exhaustion. So the answer must be based upon the quality of his reaction to stress; the absence of adventitious findings at rest or after only mild exercise (such as hopping 100 times) is not enough. The heart must be given enough work to do so that its degree and duration of acceleration is comparable to that which rowing or running would produce. A treadmill, a bicycle ergometer, the step test,[3, 6] or some other technic which measures capacity to perform,[11] is suitable. The step test requires that the boy step on and off a 16- or 18-inch platform 30 times a minute for four minutes; the heart rate is then counted one, two, and three minutes after exercise and a "recovery index" calculated by dividing the number of seconds of exercise by the sum of the three heart rates. This index is of most value where serial determinations are made on the same individual; when used in this way it is helpful in evaluating both the capacity to withstand stress and also the benefit of an exercise regime.

Fatigue is a common symptom in the adolescent, but its management requires much more than, and usually something differing from, rest. Unless some chronic illness or nutritional disorder is present exercise and new activities may be more appropriate. The fatigue may be an expression of "poor condition" resulting from too little exercise, or it may be mistaken for boredom or depression—to prescribe rest in a routine way will hardly help either.

Continued rest by itself does not increase one's ability to withstand stress. It is by doing more—and then still more—that one's capacity to do and to quickly recover from strenuous work is increased.[3]

For the adolescent who is tired—once he has been proved free of illness and when one is sure that it is not some worry or school that is making him sick and tired—increasing amounts of exercise may be just what is needed. However, during such a regime effort should be made to determine whether his capacity to work is increasing. His ability quickly to get to sleep, his appetite for the evening meal, his weight, his own feeling of well-being, and such determinations as the step test provide good indexes of the appropriateness of a program.

The desirability of being fit, of being strong, of being in condition to withstand strenuous exercise is doubted by some. It is said that these are not important for modern man in the mechanized world. I suspect that this point of view is a rationalization by those who dislike exercise. At any rate it has little place in one's thinking about the adolescent who does live strenuously

and is of dubious validity when one recalls the commonplace observation that we feel better when we have a reasonable amount of exercise, the fact that we can never tell when a maximum effort may be necessary, and when we remember that to be sufficiently fit to do the unusual allows one to perform mild exertion with little cost.[3]

The treatment of sprains and other injuries requires that these same concepts be kept in mind. Following injury and while pain persists the knee or back must be given rest and other proper treatment, but later (keeping in mind the fact that the adolescent has good reasons to want to resume activity and that when he does he will probably put that knee or back under excessive stress) both his convalescent care and the examination of his injury will need special consideration. His convalescent care should be designed to return him to activity as soon as possible, but with the maximum degree of resistance to reinjury, and his examination should take into account the demands an adolescent puts upon his musculoskeletal system.

It is not enough that a knee or back be free of pain on motion before resuming strenuous exercise—it should be stronger than it was before the injury occurred for at the time of that injury it was not strong enough to withstand the stress which was put upon it. So the supporting structures must be strengthened by one or another means.[4, 10] Progressive resistance exercise,[1] which calls for gradually increasing weight loads, so that the muscles always have to work up to capacity, is both suitable for and acceptable to adolescents.

Concurrently, the knee's or back's strength to do the sort of things that will be required of it must be determined. Absence of such physical signs as limited range of motion, fluid, pain on pressure are not enough, nor is an evaluation of strength which consists of no more than the ability to exhibit some resistance to the examiner's hand. In addition, there must be evidence of very considerable strength—in an evaluation of the knee, for example, evidence of at least as much strength as is present in the contralateral quadriceps muscle must be present.

These conditions clearly require that initial rest be followed by a period of vigorous strength-building exercise.

The adolescent who does not live strenuously, who seems to prefer rest, is one who may become obese. Some adolescents are overweight because they accumulate fat prior to their height spurt.[9] These are the chubby, young adolescents whose fatness will probably disappear as they grow taller. But others, despite caloric intakes which are not excessive, continue to gain weight. Many of these it has been shown [5] engage in very little activity—they ride to school; they are excused from athletics because their feet hurt; they let television bring them vicarious adventure. All these compound their trouble. Little will be accomplished by suggesting a low-caloric diet; the abnormality of inactivity in an adolescent must be recognized and treated, not just the excess weight. Their fear of growing up (and their defense of being unattractive), their fear of inability to achieve social or athletic success (which make them pretend indifference), or whatever it is that keeps them from the normally zestful pursuit of life typical of the adolescent will need attention if weight is to be lost.

Unfortunately, there has been widespread belief that exercise has little effect on weight. Yet those who say this are the first to insist on restriction of activity for those who are underweight and to suggest a higher caloric diet for the laborer than for the clerk. Exercise does use up fat. Mayer [7] has happily reminded us that, "farmers all over the world agree that the first step

in the production of lard or of pâté de foie gras is to prevent the producing animals from increasing their energy expenditure by unhampered wandering"; and his animal experiments [8] have shown that only a very marked increase in exercise produces significant increase in appetite. At all events, at least in adolescents—because it is out of tune with their proper development for them to be so—the fact of inactivity is as important as the fact of excessive weight.

Summary

A patient's management should encompass his needs and characteristics, as well as those of his ailment. Rest and restriction of activity should be suggested for the adolescent only after due consideration has been given to the facts that this age period is normally one of strenuous activity and that these activities contribute to proper physical and emotional development.

Adolescents' hearts or knees or backs, etc., should be judged both in the light of their importance to their general development and of the exceptional stress to which they may subject them.

Apparent willingness to be inactive or to accept restriction may need as much attention, since it is out of character in this age group, as does the excess weight or other symptom which it accompanies. Comments are made regarding fatigue, the evaluation of cardiovascular fitness, the care and evaluation of athletic injuries during convalescence, and obesity.

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Radiation Exposure Record Card

The New York State Radiological Society, as a means of keeping within acceptable limits the x-ray exposure of patients and medical personnel, is preparing exposure record cards. These are to be made available to members of the Society as well as all practicing radiologists and hospitals in the state. The card, providing blank spaces for entries, is to be given to the patient after each x-ray examination as a permanent record of his exposure. With the record cards physicians are provided with a table of the typical x-ray exposures in use and their radiation doses.

This program of the Radiological Society is a feature of its program of education and cooperation with the State Department of Health to carry out the recommendation of the National Academy of Science, that "records should be kept for every individual showing his total accumulated lifetime exposure to radiation."

A New Method for the Isolation of M. tuberculosis

ROBERT A. PATTERSON

Described here is a new diagnostic technic for the culture of the tubercle bacillus which many laboratory directors will want to put to the test.

Laboratory confirmation of the diagnosis of tuberculosis ultimately rests upon obtaining the growth of the tubercle bacillus from sputa, gastric washings, urine, and feces. Contamination of these cultures by other microorganisms normally found in these discharges is common; therefore, many methods have been devised to concentrate these discharges and to destroy the contaminants at the same time. Abbott [1] estimated that only two-thirds of the possible infectious cases in the field are detected by the generally used diagnostic methods. The two most commonly employed are the sodium hydroxide-hydrochloric acid procedure of Petroff [2] and the trisodium phosphate concentration method of Corper and Stoner.[3]

Abbott [4] incorporated penicillin in the digestion process, and Smith, et al.,[5] and Roberts, et al.,[6] employed penicillin in the culture media to reduce contamination. Freedlander,[7] Drea,[8] Smith, et al.,[9] and Hirsch [10] have observed that tubercle bacilli are readily susceptible to the bacteriostatic action of Zephiran,* but are remarkably resistant to its bactericidal action. Patterson, et al.,[11] have shown that a pure culture of tubercle bacilli can remain viable for at least 11 days in 1:1,000 solution of Zephiran and up to six days in a 10 per cent TSP-1:1,000 Zephiran mixture. These investigators also demonstrated that the use of the TSP-Zephiran mixture was superior to the methods of Petroff [2] and Corper and Stoner [3] in the isolation of tubercle bacilli from clinical materials. They obtained 11.1 per cent more positive cultures using TSP-Zephiran mixture than by TSP method of Corper and Stoner [3] and 9.5 per cent more positive cultures than with the NaOH method of Petroff.[2]

The method presented here is based on the findings of Patterson, et al.,[11] and has been adapted for use in clinical laboratories.

Media and Digestant—Petragnani's medium as modified by Frobisher [12] should be used with this method. It has been found that the carry-over of Zephiran-TSP mixture on the inoculating loop does hinder growth of tubercle bacilli if some of the other media are employed. The digestant consisted of 10 per cent trisodium phosphate (23 per cent $Na_3PO_4 \cdot 12H_2O$) in distilled water with enough Zephiran concentrate added to bring the concentration of Zephiran in the solution to 1:1,000 dilution.

Methods for Outpatients—Approximately 3–5 ml of 1:1,000 Zephiran (prepared with distilled water) should

* Zephiran is a proprietory name in the United States and Canada for a mixture of high molecular, alkyldimethyl-benzyl-ammonium chlorides which are manufactured by Winthrop-Stearns, Inc.

Mr. Patterson is bacteriologist, Veterans Administration Hospital, Lincoln, Neb.

be added to 50 ml screw-capped bottles and sent to the outpatient for collection of his sputum specimen. These specimens, when they reach the laboratory, will have the contaminants completely destroyed without injury to the tubercle bacilli. They will then be ready for the digestion process which is the same as that used for hospitalized patients. The foul odors which normally occur with putrifying specimens have also been reduced considerably.

Methods for Hospitalized Patients—Place 5–10 ml of sputum, gastric washing, urine, or feces in a 50 ml glass-stoppered centrifuge tube. A wide-mouth centrifuge tube is preferable. Add 10 to 15 ml of digestant mixture. More can be added if the specimen is particularly tenacious.

Allow the specimen to stand at room temperature for at least 15 minutes. A longer time may be allowed if desired and is advisable for feces. Shake the specimen, preferably on a shaking machine during this time. Fill the tubes with sterile distilled water and reshake them. Centrifuge at 3,000 rpm for 30 minutes. Pour or syphon off supernatant fluid.

Again fill the tubes nine-tenths full with sterile distilled water. Shake vigorously to wash the sediment. Centrifuge at 3,000 rpm for 30 minutes. Pour or syphon off supernatant fluid. Inoculate media and make smears to be stained by the Ziehl-Neelsen's technic.

Caution—Do not use sodium hydroxide when using Zephiran as this mixture is extremely bactericidal to tubercle bacilli. Instead, use an egg medium, preferably Petragnani's, for the culture medium. Bacto-Peizer TB medium has been used with good results.

The time the TSP-Zephiran mixture may remain in contact with tubercle bacilli is not as crucial a factor as it is with the sodium hydroxide method. Zephiran is comparatively nontoxic to animals; therefore, it is conceivable that the sediment obtained at step No. 9 could be used for animal inoculation, although, to date, no research has been carried out to support this statement.

Summary

The method described is superior to the two methods commonly used today. It yields 11.1 per cent more positive cultures than does the TSP method and 9.5 per cent more positive cultures than the NaOH method. There appears to be no alteration in staining or cultural characteristics of the tubercle bacilli resulting from the use of this method.

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A Serologic and Clinical Survey of Poliomyelitis in Caracas, Venezuela, and Galveston, Texas, and the Response to Salk Vaccine

LEWIS L. CORIELL, M.D., Ph.D.; KATHERINE SCHAEFFER, Ph.D.; HARRIET M. FELTON, M.D., Ph.D.; H. FERNANDEZ-MORAN, M.D., Ph.D.; and M. Z. BIERLY, Jr., M.D.

More statistical support is offered here for the frequently voiced assumption that overcrowding and unhygienic living conditions result in early infection by poliomyelitis virus with resulting naturally acquired immunity, whereas a happier economic and sanitary environment discourages this naturally acquired immunity in the early years and as a result increases bulbar and adult infections and their concomitant higher mortality and paralysis.

This report presents data on the incidence of poliomyelitis infection in children by age in three population groups of differing economic, social, and ethnic make-up, together with the antibody response to Salk vaccine in the three different groups.

Plan of Study

Three groups were selected as follows: (1) Caracas, Venezuela, clinic children of very low economic status and environmental sanitation; (2) Galveston, Tex., clinic children of poor economic status; and (3) Galveston, Tex., children of university faculty members living under good economic and hygienic conditions. The climatic environment is quite similar in all three groups. In Table 1 are shown the data relating to economic, hygienic, geographic, and environmental conditions of the three groups. In Table 2 are presented the total reported cases of poliomyelitis in Galveston and Caracas by age groups for the past 10 years. This is presented graphically in Figure 1.

An initial blood specimen was drawn on children under 14 years of age who attended the clinics. Each child was then given three injections of Salk vaccine * of 1 ml each intramuscularly at 0, 7, and 35 days and a second blood was drawn one week after the third dose of vaccine. In Galveston each child was bled, the names were arranged alphabetically, and the serum of every fourth

* Poliomyelitis vaccine Lot 235 was kindly supplied by Wyeth Laboratories.

Dr. Coriell is medical director, South Jersey Medical Research Foundation, Camden, N. J. Dr. Schaeffer is presently with the Cancer Research Laboratory, University of Florida, Gainesville, Fla. Dr. Felton is professor of pediatrics, University of Texas, Medical Branch, Galveston, Tex. Dr. Fernandez-Moran is director del Instituto, Venezolano de Neurologia e Investigaciones Cerebrales, Ministerio de Sanidad, Caracas, Venezuela. Dr. Bierly is with the medical department, Wyeth Laboratories, Philadelphia, Pa.

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child was selected for analysis. In Caracas every fifth child was bled and all sera were tested for the presence of antibodies. The pre- and postvaccination bleedings were tested simultaneously for poliomyelitis antibodies Types 1, 2, and 3 by the metabolic inhibition test [1] against 100 tissue culture ID_{50} doses of Mahoney, MEF-1, and Saukett virus using rhesus monkey kidney cells. In Table 3 are shown the number of patients given the vaccine and the specimens available for laboratory analysis.

Results

In Caracas a total of 2,098 children completed the series of three injections and paired sera were obtained on 435, of which 241 were satisfactory for testing in tissue culture. (The remainder were broken, hemolyzed, or toxic for the tissue culture system.) The occurrence of antibody in the initial blood specimen is presented in Table 4 and shows that by age two years, 68–86 per cent of children have antibody to Types 1, 2, or 3, and by age six years 80–100 per cent have antibody to one or more types.

In the Galveston clinic group a slightly older age distribution was studied. By age four years 70–85 per cent of children had antibody to Types 1, 2, or 3, and by age 10 years 70–100 per cent had antibody to one or more types. In contrast to this only 6–25 per cent of the Galveston staff children

Table 1—Experimental Data on the Three Study Groups

	Galveston		Caracas
	Staff	OPD Clinic	Mother and Child Sanitary Centers
Population	70,000		875,387
Nationality	American	American Latin American	Venezuelan
Race	White	White and Negro	Mestizo
Climate	Semitropical		Semitropical
Longitude	94° 7′		66° 30′
Elevation above sea level	7 ft.		3,000 ft.
Mean average temperature	70.1° F		69.3° F.
Average yearly rainfall	45.2″		39.3″
Relative humidity	75–90%		82%
Hygienic conditions of homes	Good	Poor	Poor
Housing	Good	Substandard	substandard
Indoor water closets	100%	95%	Rare
Number of persons/room	< 1	3–5	4–8
Water supply	City	City	City and wells
Average children/family	2	4	> 4
Economic level	Good	Seasonal dock workers	Day laborers
Public school system	Good	Good	None
Physician/population ratio	1/500		Not known
Medical care	Private physican	Medical school free clinics	Free Clinics
Average annual income	$5,000	$1,800	< $1,800

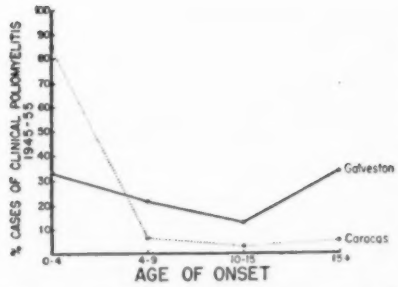

Figure 1—The Age Distribution of All Reported Cases of Poliomyelitis in Two Cities Over the 10-Year Period, 1945–1955.

showed antibody to Types 1, 2, or 3 by age two years, and by age nine years 45–60 per cent showed antibody for one or more virus types.

These data indicate that infection, as shown by the presence of neutralizing antibody, occurs very early in life in both the Caracas children and in the clinic children from Galveston. One cannot distinguish between these two groups on the basis of the data. In Caracas there is remarkably good correlation between the presence of serum antibody at an early age and the age distribution of clinical poliomyelitis, i.e., 85 per cent of cases occur in children under five years of age; whereas in Galveston, with a similar antibody distribution in the clinic group, only 33 per cent of cases occur in children under five years of age. This may be explained by the observation that there are two groups of children in Galveston. The acquisition of antibody in the Galveston staff children takes place after the preschool years; whereas in the clinic group the reverse is true as shown in Table 4. Epidemiologically there are two groups in Galveston—the clinic children with early infection and the group represented by the staff children where infection occurs later in life.

The difference in intensity of past experience with poliomyelitis is shown more clearly by plotting by age groups the percentage of children who have natural antibody for all three polio-

Table 2—Total Reported Cases of Poliomyelitis Over an 11-Year Period, by Age Groups, in Two Cities Bordering the Caribbean

Age in Years	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955 (10 Months)	Total	Per cent
Caracas													
0–4	5	3	10	4	12	4	19	18	130	41	69	315	85.0
5–9	1	2			3	2	1		7	4	3	23	6.0
10–14			1	1	1	2		1	5	1	3	15	4.0
15 +							6	3	7	1	2	19	5.0
Total	6	5	11	5	16	8	26	22	149	47	77	372	
Rate per 100,000	1.0	1.0	1.2	1.0	2.0	1.0	3.1	2.9	18.1	5.9	9.6		
Galveston													
0–4	6	1		16	2	4	8	19	3	4	4	67	33
5–9	5	2	1	9	3	4	4	6	1	9	2	46	22
10–14	5			3	1	3	4	5		3	1	25	12
15 +	5			21	2	6	10	10	5	3	5	67	33
Total	21	3	1	49	8	17	26	40	9	19	12	205	
Rate per 100,000	30.0	4.3	1.4	70.0	12.0	24.3	37.0	57.0	13.0	27.0	17.0		

Table—3 Statistical Data on Patient Participation in the Three Study Groups

	Galveston		Caracas
	Staff	OPD Clinic	Mother and Child Sanitary Centers
Ages	2–14	4–10	2–7
Number vaccinated	142	283	2,098
Vaccination dates	2/19	2/5	2/25
	2/26	2/12	3/4
	3/26/55	3/5/55	3/30/55
Volume, each injection	1.0 ml IM	1.0 ml IM	1.0 ml IM
Completed series	133	265	2,098
Reactions attributable to vaccine	None	None	None
Home visit within 24 hours	Parents evaluated reactions	Medical students	None
Poliomyelitis cases following vaccination	None	None	None
Blood specimens collected	133	265	435
Blood specimens completely tested	75	110	241

Table 4—Age Distribution of Neutralizing Antibody to Poliomyelitis Virus in Prevaccination Serum Specimen

Age in Years	Total	Type 1 Positive	Per cent	Type 2 Positive	Per cent	Type 3 Positive	Per cent	Types 1, 2, and 3 Positive	Per cent
				Caracas Children					
2 and younger	22	17	77	19	86	15	68	10	45
3	58	44	76	45	78	43	74	28	48
4	39	31	79	28	72	31	79	23	58
5	48	36	75	34	70	36	75	30	62
6	27	21	81	25	93	27	100	21	78
7	47	36	77	34	72	38	80	29	62
				Galveston Clinic Children					
3 and 4	20	14	70	17	85	14	70	9	45
5	21	13	62	16	76	14	67	9	43
6	21	15	71	17	80	15	71	9	43
7	21	19	90	18	86	15	71	12	57
8	17	10	59	16	94	13	77	8	47
9 and 10	10	8	80	10	100	7	70	6	60
				Galveston Staff Children					
1 and 2	16	1	6	4	25	2	13	0	0
3 and 4	17	4	23	9	53	3	18	1	6
5	10	4	40	5	50	3	30	1	10
6 to 9	20	10	50	12	60	9	45	4	20
10 to 14	12	7	58	7	58	7	58	4	33

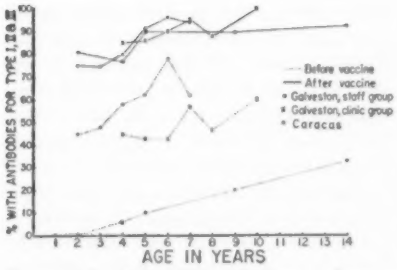

Figure 2—The Three Lower Curves (Dotted) Show the Percentage of Children by Age Groups with Naturally Acquired Serum Antibody for Poliovirus Types 1, 2, and 3 in Caracas, Venezuela, and in Two Groups of Children from Galveston, Tex. The Three Upper Curves (Solid Line) Show the Percentage of Children with Antibody for all Three Poliovirus Types After Receiving Salk Vaccine.

myelitis types. This is presented in Table 4 and in the lower three curves in Figure 2 and shows that the Galveston clinic group approximates the Caracas group, but actually occupies an intermediate position between the staff children and the Caracas clinic group. Six per cent of the four-year-old staff children had antibody for all viruses, compared to 45 per cent of the Galveston clinic children, and 58 per cent of the Caracas four-year-olds.

The upper three curves in Figure 2 and Table 5 show the antibody titers after vaccination. It is obvious that all three groups of children responded in a similar manner and that the Galveston staff children developed antibody, as well as the Caracas clinic group. Every

Table 5—Distribution of Neutralizing Antibody to Poliovirus in Postvaccination Serum Specimen

Age in Years	Total	Type 1 Positive	Per cent	Type 2 Positive	Per cent	Type 3 Positive	Per cent	Types 1, 2, and 3 Positive	Per cent
				Caracas Children					
< 2	12	12	100	11	92	10	83	9	75
3	43	43	100	38	88	36	84	34	75
4	25	25	100	22	89	20	80	20	80
5	36	36	100	35	97	33	91	33	91
6	26	26	100	25	96	25	96	25	96
7	34	34	100	33	97	33	97	32	94
				Galveston Clinic Children					
3–4	20	20	100	20	100	17	85	17	85
5	21	21	100	21	100	18	86	18	86
6	21	21	100	21	100	19	90	19	90
7	21	21	100	21	100	20	95	20	95
8	17	17	100	17	100	15	88	15	88
9–10	10	10	100	10	100	10	100	10	100
				Galveston Staff Children					
1–2	16	16	100	16	100	13	81	13	81
3–4	17	17	100	17	100	13	76	13	76
5	10	10	100	10	100	9	90	9	90
6–9	20	20	100	20	100	18	90	18	90
10–14	12	12	100	12	100	11	92	11	92
Positive/Total		361/361		349/361		320/361			

child tested in all three study groups developed postvaccination antibody for poliomyelitis virus Type 1, while 12 failed to develop Type 2 antibodies, and 41 did not develop Type 3 antibodies, or 97 and 89 per cent with detectable antibody. The relative potency of the Types 1, 2, and 3 components of the vaccine as shown in these children is in agreement with the results of monkey potency tests. The geometric mean antibody titer in monkeys was 496, 192, and 70, respectively, for poliovirus Types 1, 2, and 3.

The majority of the children who did not develop detectable antibody were under five years of age, i.e., nine of the 12 without Type 2 antibodies and 24 out of the 41 without Type 3 antibodies. However, in the Galveston study 22 children did not develop antibody for Type 3 virus and only 10 of these were under five years of age. In Galveston 26 children had no serum antibody to any virus in the prevaccination specimen and all developed antibody for Types 1 and 2 following vaccination, but only 20 of the 26 developed antibody for Type 3 virus. We believe that these data indicate a slightly poorer response in children under five years of age largely because there are more triple negatives in this group. However, as reported by Brown [10] and observed by us in an unpublished study, antibody responses comparable to those seen in older children are to be expected following a booster dose of vaccine.

The serum antibody titers pre- and postvaccination for 48 paired sera from Caracas and 108 paired sera from Galveston are shown graphically in Figure 3 by the method used by Francis, et al.[2] Because the response to vaccine was similar, the Galveston clinic and staff groups are combined. Each dot on the large square represents one child and when read on the abscissae it

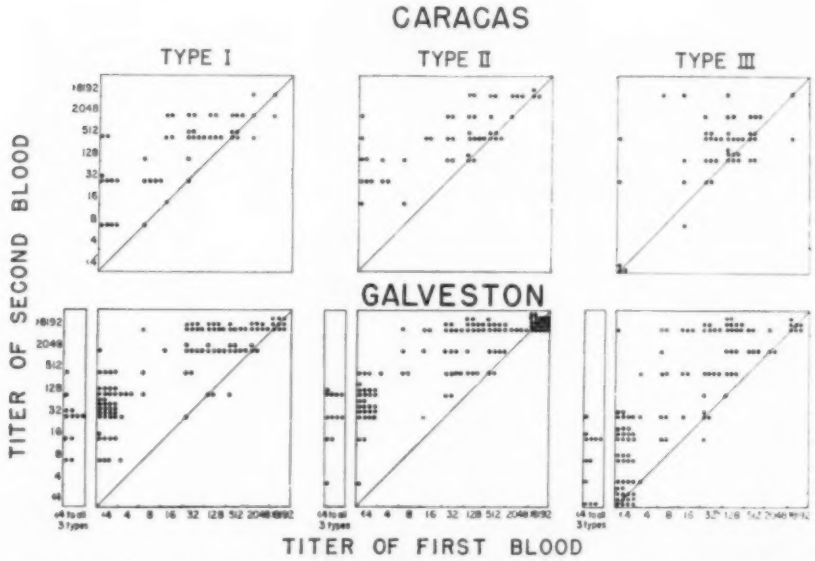

Figure 3—These Figures Show the Quantitative Neutralizing Antibody Titer Before and After Salk Vaccine Administration for Each Poliovirus Type.

gives the prevaccination titer and when read on the ordinate scale it gives the postvaccination titer. If the dot appears on the diagonal line the pre- and postvaccination titers are the same, if to the right of the diagonal the titer dropped, and if to the left of the diagonal, the titer increased in the postvaccination serum. The small column at the left shows only those children who had no prevaccination antibody (less than 1–4) for any virus type. None of the children tested from Caracas fell into this category.

Discussion

Permanent immunity to poliomyelitis may follow the first infection with each virus type, or a series of reinfections may be necessary before permanent immunity persists.[3-5] Since the persistence of immunity following natural infection is still in doubt it seems premature to expect a definite answer as to whether one artificial immunization with Salk vaccine will confer permanent immunity. It is interesting to note, however, that the Galveston staff children with a low level of natural immunity, as shown by the presence of neutralizing antibody, responded as well to Salk vaccine as the children with a high level of natural immunity.

This study suggests a high correlation between the presence of neutralizing antibody at an early age and rarity of clinical poliomyelitis in Caracas. This is associated with low economic and hygienic living conditions. In Caracas over the last 10 years there is a suggestion that poliomyelitis is starting to change from an endemic disease of infants to an epidemic pattern in which a higher percentage of older children have clinical disease. This is accompanied by improved living standards for all the population and is repeating the pattern seen in many other countries.[6-8] The Galveston study seems to emphasize the importance of personal hygiene and crowding in determining the incidence and epidemiology of poliomyelitis. Here in one city on an island connected to the mainland by a causeway are a group acquiring poliomyelitis in infancy and a group who are not infected until they reach school age or later. Both groups share a common climate, longitude, water supply, and attend the same schools. They differ in racial extraction, but this appears to be unimportant.[7] The significant difference between these two groups must be the hygienic conditions of living—the crowding and personal hygiene. These are affected by the social, economic, and educational environment. Walton and Melnick[3] in a study of two socioeconomic groups within the same city stressed the importance of crowding on the prevalence of neutralizing antibody within families.

It is interesting that the Salk vaccine appears to offer equal protection to both groups if the antibody response is a reliable index. This is encouraging, because it is among people like the Galveston staff group that epidemic poliomyelitis occurs, and where most of the bulbar and adult poliomyelitis is found with the concomitant higher mortality and paralytic rates.[9] It is the existence of such groups which has changed paralytic poliomyelitis from a rare curiosity to an annual epidemic during the last 40 years and it is these groups of people who need the vaccine.

Summary

A serologic survey of antibodies for all three types of poliovirus in children from Caracas, Venezuela, and Galveston, Tex., showed that infection occurs in infancy in the children who attend free medical clinics in each city. A group of children from families of university staff in Galveston presented a very low incidence of naturally acquired antibody

for all three polioviruses. A survey of clinical poliomyelitis in the two cities for the past 10 years shows that 85 per cent of reported cases occur in children under four years of age in Caracas; whereas in Galveston there are two periods of peak incidence corresponding to early infancy and to later childhood and adulthood.

Evidence is presented that within the temperate zone geography is of minor importance in determining the epidemiology of poliomyelitis and that personal hygiene and living standards are the significant factors. Administration of the Salk vaccine stimulated antibody formation in all groups of children, i.e., those with or without a high percentage of naturally acquired antibody. The vaccine would therefore appear to be effective in those individuals who need it most, because they have not experienced previous infection.

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National Medical Library a Reality

The Armed Forces Medical Library was turned over to the Public Health Service on October 1, to become the National Library of Medicine in accordance with an Act of the 84th Congress. In special ceremonies the Library was officially turned over to the Service by E. H. Cushing, M.D., assistant secretary of health and medical affairs, Department of Defense, and accepted by Surgeon General Leroy E. Burney. Following the ceremonies, director of the Armed Forces Library and continuing as director of the new National Library, Col. Frank B. Rogers, took representatives of the Public Health Service and the Department of Health, Education and Welfare on a tour of the Library.

Plumbing Codes in Public Health

MALCOLM A. BOUTON, M.D., M.P.H., F.A.P.H.A.

A city health officer examines today's concern with plumbing codes in public health and suggests use of nationally promulgated codes, rather than local partisan ones.

To every American a public water supply is ipso facto a safe one. Yet a public water supply is always a potential hazard to the health of the public it serves, since without constant and adequate safeguards it can suddenly become the vehicle of a communicable disease, affecting large numbers of persons who have innocently and justifiably placed their faith in those to whom they have delegated the responsibility for its safety and purity.

Between the years 1920 and 1929 there were 242 epidemics of typhoid fever and dysentery reported in these sanitation-conscious United States, resulting in 9,367 cases of typhoid fever and 84,345 of dysentery, with 630 deaths. Thirty-five per cent of these epidemics occurred in cities having populations of over 5,000 and served by public water supplies, several being reported from major metropolitan centers of this country. Perhaps the most famous and frequently referred to example of this type outbreak is the epidemic of amoebic dysentery during the Chicago World's Fair in 1933, which by June, 1934, had resulted in 932 cases and 52 deaths throughout the United States and Canada. Investigation of that outbreak, which originated in two first-class Chicago hotels revealed, as is well known, antiquated plumbing and cross-connections between potable water supplies and other supplies subject to potential pollution. Cross-connections between potable and nonpotable water systems and with sewers permitted the potable water supplies to become contaminated when the sewers became surcharged as a result of heavy rain. Broken sewer lines flooded an area where food and ice were stored, prepared, and handled.

Reference is made to these epidemics merely to point out the obvious fact that, even in the light of present-day public health knowledge and engineering know-how, conquered diseases of the past can return to plague us if we relax our defenses. Fortunately such outbreaks are exceptions. In fact one of the greater achievements in American public health has been the virtual wiping out of those communicable diseases which are transmitted through drinking water polluted by human waste. In this work health agencies, acting under the police powers reserved to the states in the federal Constitution, have made wide use of plumbing codes of various types. For years such regulations remained scattered and fragmentary; 15 years ago it was estimated that 1,600 plumbing codes were in use in this country, all of them different.

Aside from the confusion and lack of uniformity caused by a multiplicity of different codes, there are special problems inherent in the development and enforcement of codes at the local level which are obviated when the code is standardized at the state or national level. At the grass roots code drafters are too close to special interest and pressure groups to which they may be too

Dr. Bouton is commissioner of health, City Health Department, Schenectady, N. Y.

sensitive and vulnerable. For example, organizations claiming to represent the interests of the homeowner, such as homeowners' associations and the like, may go to great lengths to force provisions into the code which will allow the homeowner to do all his own plumbing within the four walls of his home. Homeowner plumbing is a dangerous practice from the public health point of view and yet, if it is disallowed, cries of infringement on the rights of the individual arise. Granted there is always a certain amount of homeowner plumbing done outside the law, much of which can be discovered sooner or later by an alert plumbing inspector. However, to let down the bars completely, even if the homeowner is required to pass an examination and secure a permit, is as impractical as it is dangerous. Plumbing inspectors have a difficult enough time keeping track of the work of licensed contractors.

Those in the position of selling fixtures are also deeply interested in a code during its drafting stage. They may side with the homeowner if they stand to gain financially and may exert pressure regarding the use of the materials which will earn them the most profit. A most awkward situation may arise if an influential politician also happens to be in the plumbing fixture business, or has a friend in it. Let us not forget the purely political angle, since code provisions or the lack of them may, if the political climate is right, be greatly influenced by temporary political expediency. Given the proper setting a new plumbing code can become a wonderful "political football" at the local level.

Granted there are lobbies and political considerations at the state and national levels, but code development at those levels will usually be much less harrassed by the petty interests we have been discussing. If, however, an attempt is made to draft a code locally, the working committee should have broad representation among its members, including architects, building contractors, plumbing contractors, journeyman plumbers, consulting engineers, the health department, and the homeowners.

Enforcement problems, too, are greater when each community is operating under a different code. The local plumbing contractors are, of course, familiar with the particular code under which they do most of their work; and conversely, the plumbing inspector is familiar with the individual idiosyncrasies of the plumbing contractors with whom he is constantly dealing. If the plumbing inspector is competent and respected by the contractors in his jurisdiction, and this of course is most important, enforcement will go along very smoothly on the jobs being done by these men. Also, larger contracting firms, while they may be from out of town, seldom cause difficulties in code enforcement matters, since they have more to lose than to gain by doing an inferior job. One of the chief problems is the smaller out-of-town contractor who frequently operates by taking out his permit under the name of a locally licensed person and then proceeds to disregard the local plumbing code. More frequently than not he will neglect to ask for inspections until the job is completed, if he does so at all. Either because of incompetency or desire to "cut corners" these contractors often violate the code as flagrantly as the homeowner, "do-it-yourself" plumber.

Here, again, a standard uniform plumbing code at the state or national level would obviate some of the enforcement problems, particularly if it were combined with a system of state licensure. There is no reason for the separate licensing of the plumbers in each community through an examining board of plumbers nor for the requirement that an outside contractor either take the local examination or operate under the license of a locally licensed

contractor. This leads directly to the enforcement difficulties mentioned above and creates a perfect situation for illegal payments on the side for the privilege of being covered by a license.

The health officer is concerned by all this, since inadequate codes and poor enforcement mean more than merely a poor plumbing job. To him they signify possible contamination of the public water supply and disease. Health officers close to these problems are confident that a standardized code and state licensure will go a long way toward solving problems which are especially acute in certain areas. It might be pointed out here that many states have state codes, both with and without state-wide licensure of plumbers; while others have state licensure without a code. The state of Indiana, for instance, adopted a plumbing code in the early 1920's which was amended in 1943. As a matter of fact, the need for a generally accepted standard has long been recognized by public health officers, sanitary and mechanical engineers, building officials, and master plumbers.

One of the earliest efforts in this direction was made by the Subcommittee on Plumbing of the Building Code Committee of the U. S. Department of Commerce, which in 1924 published, "Recommended Minimum Requirements for Plumbing in Dwellings and Similar Buildings."

In the American Standards Association, a Sectional Committee on Minimum Requirements for Plumbing and Standardization of Plumbing Equipment, A40, was organized in 1928. When, in 1934, the Subcommittee on Plumbing in the Department of Commerce was discontinued, the ASA set its own Sectional Committee, A40, the task of establishing minimum requirements for plumbing.

After considerable delay and a number of false starts a successor subcommittee, representing 30 national organizations and government bodies, submitted to ASA a Standard Plumbing Code for approval and designation as an American Standard; this was approved on February 17, 1949.

The sponsors of this project, however, recognized that several other plumbing standards had achieved substantial acceptance in this country. A committee representing organizations sponsoring plumbing codes was, accordingly, set up to coordinate the requirements of these codes. The findings and recommendations of this group were incorporated in a "Report of the Coordinating Committee for a National Plumbing Code," issued in 1951.

The report was based on laboratory research in the phenomena of hydraulics and pneumatics within a plumbing service and on the considerable practical experience of committee members. Municipalities in need of an up-to-date plumbing code recognized that this report could serve as a basis for an improved American Standard.

The sponsors, therefore, conducted a survey of organizations interested in the A40 project and found the response "overwhelmingly favorable." Suggestions for improvement were considered by the Coordinating Committee and incorporated in the draft of a proposed American Standard National Plumbing Code. The proposed standard, submitted to the American Standards Association, was designated an American Standard under date of January 25, 1955.

The American Public Health Association has been prominently identified with these standards; it was cosponsor with the American Society of Mechanical Engineers of both ASA plumbing standards, and it was represented on the Coordinating Committee which issued the "Report for a National Plumbing Code." The American Society of Sanitary Engineering, the Conference of State Sanitary Engineers, the National

Association of Plumbing Contractors, the Building Officials Conference of America, and the Western Plumbing Officials Association were also prominent in this project.

A parallel development in code writing which may have useful possibilities elsewhere has been under way in New York state for several years past. A law enacted in that state in 1949 set up a Building Code Commission to formulate a state-wide uniform code for the construction of buildings. A state code, the final section of which was recently completed, has so far achieved voluntary acceptance in 200 cities, towns, and villages.

The state code is formulated in terms of "performance objectives," as required by the law under which the Code Commission was organized. This means that its provisions define the objectives to be attained in building without freezing into law the specific methods or means of attaining them, a principle which applies to the plumbing as well as the other provisions of the state code.

The New York State Building Code Commission has also recognized all three of the national plumbing standards; installations which meet the requirements of any of those standards are considered as satisfying the provisions of the state code. The three national plumbing codes contain specifications of materials and methods in considerably greater detail than does the state code, which is written in "performance" language.

To supplement the performance requirements of its code and facilitate its interpretation and use, the State Building Code Commission has, however, published a Code Manual, which does give specification details. This manual describes and illustrates acceptable ways of meeting the performance requirements of the code, although only the code has the force of law in the communities which use it.

Other basic differences in approach to code problems are exemplified by different standards, some of which raise questions of inspection and enforcement. In a foreword to "A Proposed Housing Ordinance," published in 1952 by the American Public Health Association, Dr. C.-E. A. Winslow pointed out: "The suggestion that a housing ordinance should be enacted by the health officer does not imply any infringement of the powers and duties of building departments or fire departments. . . . The adoption by the health department of sound and well balanced codes dealing with the health aspects of occupied dwellings may perhaps lead to instructive comparison of overlapping features of health codes and building codes and to gradual voluntary modification and improvement of both."

An article in the November, 1953, issue of the American Journal of Public Health entitled, "Housing Supervision in a Local Health Department," also points to some of the other problems of health officers in housing inspection. "It was . . . impossible for any one city department to assume responsibility for the enforcement of all the laws emanating from the Police Department, Fire Department, Zoning Board, and the Public Health Department. By mutual agreement, it was decided that the Health Department sanitarian should serve as the controller for all the inspection services. . . . If problems were found which necessitated plumbing inspection, electrical inspection, or enforcement of the Building Code, these divisions might then be called into action."

The public health officer finds himself increasingly involved in the code problems of every department of municipal government, and there are no easy solutions to these problems. But it is clear that he cannot delegate his function in this area of public health to local plumbers, whose responsibility and in-

terest may be quite different from his own.

It is also apparent that the public health officer has a growing awareness of his larger role in the movements of code reform which have been discussed here. The series of publications on basic principles and standards of healthful housing, issued over a period of 20 years by the American Public Health Association, is good evidence of this.

The National Plumbing Code was approved a year ago by the American Standards Association. A technical committee under the leadership of the Public Health Service has been organized to continue the ever-present review and revision necessary to keep such a vital code up to date. The work of drafting a national plumbing standard necessitates, during the years of its preparation, considerable field research and laboratory tests at such centers as the National Bureau of Standards, University of Iowa, University of Illinois, the Public Health Environmental Center in Cincinnati, and other nationally recognized laboratories. The combined knowledge of professional, industry, and government groups participating in this work includes every aspect of plumbing.

The New York State Building Code Commission is also preparing a separate plumbing section in which the plumbing provisions of its own building code and Code Manual will be coordinated with those of the American Standard National Plumbing Code.

Each of these efforts—despite difficulties and obstacles—is another step toward code uniformity and improved inspection and administration. Public health officers have an important stake in these developments.

Several years ago the Committee on the Hygiene of Housing of the APHA formulated "An Appraisal Method for Measuring the Quality of Housing," an attempt to devise a quantitative technic for inspecting and evaluating housing quality. Similarly, the prime objective of the "performance-type" code is the quantitative presentation of the performance characteristics of materials and equipment. The successive national plumbing standards, too, have been increasingly based on research and testing. The dominating trends in each instance are in the direction of measurement and standardization.

The goals of public health will be well served by a furtherance of these trends.

Public Health Association in India

The Indian Public Health Association has been organized and was formally inaugurated in New Delhi on September 28. A series of scientific sessions and an exhibit were a part of the inauguration proceedings. Lieutenant Colonel C. K. Lakshmanan, director-general of health services of the government of India, is chairman of the new association.

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Some Thoughts on the Environment

An outbreak of hepatitis in Sweden in November and December, 1955, was traced to a seaside village supplying oysters to Stockholm, Göteberg, and other towns. With 629 primary and 62 secondary cases about 33 per cent were from professional classes, with about 20 physicians on the sick list. Apparently the epidemic had its origin in the village in the oyster industry where a workman was found to have had hepatitis. The epidemiologic inquiry was detailed and excellent, disclosing the first outbreak on record in which oysters have been shown to transmit epidemic hepatitis. The site for the storage of these oysters was in a water of inferior quality.

Water-borne hepatitis accounted for thousands of human cases in Delhi, India, and in Austria within the past twelve months. The epidemics were well authenticated by extensive epidemiologic surveys, although much remains to be learned about the water quality features thereof. Future control measures need firm and detailed scrutiny.

Forty-four cases of typhoid fever have been reported in Iowa for January through June, 1956, as against 10 for the same period of 1955.

An intensive search for some 500 persons in 14 states who may have contracted typhoid fever at a church meeting at Monarch Springs, Mo., is being directed by the Public Health Service Communicable Disease Center at Atlanta, Ga. Seven cases of typhoid fever, three in Louisiana, two in California, and one each in Missouri and Oklahoma have been reported among persons who were at the Missouri church meeting. Two have died.

Nearly 200 families attended the church meeting. They came from, among others, Tennessee, Virginia, Kansas, Arkansas, Missouri, Oklahoma, Alabama, California, Colorado, Indiana, Louisiana, New Mexico, Oregon, and Pennsylvania. Preliminary investigation pointed to a contaminated well as the probable source of infection.

"City-Wide Medical Puzzle Is Solved as Dragnet Snares Typhoid Carrier" is the headline this summer in a New York City release. It describes the brisk epidemiologic detective job done by the forces of the New York City Health Department in tracking down the cause of two typhoid fever cases in two girls. They were guests at a confirmation party with some 150 more from all parts of the city. Three cases so far, but all the guests are being studied. The culprit, as the probable source of the outbreak, is the salad man who had typhoid bacilli in his stools.

An outbreak of salmonellosis, caused serious illness in at least 123 persons in

Georgia this summer. Half of the patients were hospitalized. Another 200 people were probably infected. The source—probably five carriers making up chicken salad in a food-packaging plant.

In Alabama 60 persons were hospitalized, five seriously ill and one with an intestinal hemorrhage. Urine examinations on all 60 were positive for arsenic. All lived in an institution, all ate cabbage raw, after supposed washing. Liquid spray used on peach trees apparently blew on a cabbage field. A similar occurrence in 1955 affected a few persons in the same institution.

An isotope farm has been dedicated at the Medical College of Virginia at Richmond on May 10, 1956. Plants such as alfalfa, soy bean, buckwheat, rye, tobacco, foxglove, and poppy have been cultivated in a radioactive carbon dioxide atmosphere for dozens of scientific purposes. In the products of such an isotope farm one will have an enormous reservoir of tools for the investigation of biochemical mechanisms.

Still another observation that "Americans are living in an atmsophere of carcinogenic chemicals," but the risk is low some think because only 20,000 cases of lung cancer occur per year. The observation provides another etiologic base for major attack on the pollution of the atmosphere.

These random notes come from the scientific press of the last few months. The health officer, the engineer, the chemist, and collateral workers in the preventive medicine field need no markers to draw their own lessons from this too brief summary of the challenges of the complex environment to the modern world!

The American Council to Improve Our Neighborhoods

ACTION is a national nonprofit and nonpartisan public service organization whose aims are the conservation and improvement of America's homes, neighborhoods and communities, and the elimination and prevention of slum conditions. The aim of this citizens group is "to replace apathy and neglect with action, to stimulate better citizenship by helping Americans help themselves to better living through greater pride in their homes and neighborhoods." ACTION claims not to replace or duplicate the functions of existing organizations. Rather it cooperates with them, encouraging and assisting neighbors to work together for better surroundings.

This group was launched in 1954 at a meeting in Washington, D. C., with the blessing of President Eisenhower and has as its board 60 directors chosen from national leaders, representing a wide cross-section of the country and of the fields of industry, education, finance, government, civic and trade organizations, labor, and public service associations. The program includes research, education, information, and local assistance.

ACTION points out that, despite unprecedented new home construction since World War II, very little has been done about houses which increasingly become substandard. Fewer than half of the 45 million nonfarm homes in America are in good condition. Further, nearly half, some 20 million, need basic improvements and repairs. Some five million American homes are said to be slums which must be demolished as an important step in the nation's march against disease, crime, delinquency, and social unrest.

It was announced on September 26 in New York that to dramatize the growing fight against blight ACTION is sending a panoramic screen presentation on an eight-month tour of some 90 American cities. Titled "Our Living Future," the

hour and a half show is being provided as a rallying point for interested citizens to further their own local improvement programs. It will be sponsored in each city by representative local groups. The film opened in New Haven, Conn., on September 29 and moved to Lowell, Somerville, Cambridge, and Springfield, Mass., and is scheduled through Buffalo, Schenectady, Troy, and Niagara Falls, N. Y., among other eastern cities before starting west on a tour that will continue through May of 1957. The film has been prepared by Life Magazine as a public service contribution to ACTION's continuing program.

The American Public Health Association during the last twenty years has had a lively interest in the public health aspects of housing and in the construction of entire communities so as best to contribute to the health and safety and good order of the American people. A review of at least twenty of the publications of the APHA Committee on the Hygiene of Housing since 1937 reflects the persistence and the versatility of an approach which was superbly led by C.-E.A. Winslow, Dr.P.H., formerly professor of public health at Yale University and formerly editor of this Journal. To these technical achievements can now be added the inspiration and leadership of a high-level group which is carrying the message to the grassroots. Health departments across America and, indeed, all public health workers should lend their cooperation to the program of ACTION.

Dr. Henry E. Sigerist, now of Switzerland and formerly of Johns Hopkins University, in his new volume on "Landmarks in the History of Hygiene" (Oxford University Press, 1956), describes some of the writings of Galen, a Greek physician who lived in Rome and died in 200 A.D. Galen wrote that "hygiene must not be somatic alone, but also mental; all hygiene must be psychosomatic" . . . Further, "the habit of mind is impaired by faulty customs in food and drink and exercise, and sights and sounds and music. Therefore the hygienist must be skilled in all of these, and must not consider that it concerns the philosopher alone to mould the habit of the mind."

(Quoted from Public Health, the Journal of the British Society of Medical Officers of Health, October 1956.)

Clearing House on Public Health Salary Information and Personnel Needs

A Health Career Motion Picture

The film, "Health Careers," has been released by the National Health Council. It is another resource to advance the Council's Health Careers Project which has already produced the Health Careers Guidebook and supporting publications. The film is available on loan for school, community, and television use without charge, or prints can be bought at a nominal fee.

The film has a warm human focus showing actual health workers doing their actual jobs. It is designed primarily for high school students in school and community showings and has also been cleared for TV showings. Its flexibility makes it useful as a counseling tool, as a teaching aid, as the core of a TV program highlighting the local health careers story, as a curtain raiser for specialized recruitment films, and as the basis for a symposium in community health career meetings.

The film has been provided to national voluntary health agencies, state health and education departments, and major public service film libraries so that it can be loaned without charge. Additional prints are available at $25. Further information on either loan or purchase from Health Careers, National Health Council, 1790 Broadway, New York 19.

Another film that might have recruitment value is "Walter Reed and the Conquest of Yellow Fever," one of the Health Heroes Series of the Metropolitan Life Insurance Company. Produced by transfilm, the 16-minute color sound slidefilm, including 73 frames of art illustrations, is loaned freely to junior and senior high schools and public libraries, together with a teacher's discussion guide and script.

Metropolitan's Health Heroes Series was started in pamphlet form and included stories of Curie, Jenner, Koch, Nightingale, Pasteur, Reed, and Trudeau. Later the series was put into silent films. The Walter Reed slidefilm is the second to be put into sound, having been preceded by the Florence Nightingale story.

The new Reed film, as is the Nightingale, is available on loan from the School Health Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York City.

"Hospitals" Outlines Salary Plans

In the new semimonthly, "Hospitals," of September 1, 1956, E. J. Rizos, staff representative of the American Hospital Association, discusses "Establishing Modern Wage and Salary Plans." "Pay administration," says he, "is a significant aspect of each hospital's personnel program, embracing the whole hospital organization." He believes the pay administration process includes two broad phases—determining pay policies based upon "the principle of fair and equitable compensation." Beyond that is the process of implementing the pay policies chosen in terms of an over-all pay structure and the pay of each employee.

His conclusion might well be applied to public health as well: "Pay administration is a continuous process and constant effort is needed to keep the pay plan up to date. As a sequence of decision-making processes, pay administration is thus influenced by the values, attitudes, motives, stereotyped beliefs, cultural characteristics, and personality

structure of those who constitute the hospital family. At the same time these processes are tempered by a system of hospital accountability, responsiveness, and sensitiveness to its external environment—to the community which established it, supports it, and uses it. Such an approach is concerned with the hospital employees as persons, without neglecting the procedural phases characteristic of pay administration."

American Hospital Association, 18 E. Division St., Chicago 10, Ill.; 30 cents per copy, $5 annually.

Illinois Local Salaries

The Division of Local Health Services of the Illinois Department of Health has recently published its annual analysis of salaries of full-time public health workers in local areas, exclusive of Chicago. Included are the reported July, 1956, salaries of 426 workers in 12 occupational groupings in 22 health jurisdictions, 13 county and nine municipal. Sixty per cent of the workers included in the study were in county departments.

Average salaries paid for July, as well as minimum and maximum salaries for each occupational group, are shown. The material is prepared "for the convenience of boards of health and others who find this information useful." It has been sent out to local health departments so that they may place copies in the hands of the secretaries and presidents of boards of health.

While the supply lasts copies are available from Dr. Charles F. Sutton, Deputy Director, Division of Local Health Services, State Health Department, Springfield, Ill.

Denver Pay Plan

The office of the personnel director in the Career Service Authority of the City and County of Denver has recently prepared and published a pay survey for engineering, hospital, and miscellaneous jobs. In order to determine the prevailing rate for 14 jobs in the Denver area, information from 65 plants in seven industry groupings employing 26,000 workers was obtained, as well as from 11 hospitals employing 6,700 persons.

For nine job classifications for which the recruitment field is wider than the Denver area of four counties, prevailing rates were obtained for 11 cities and five counties in seven states of the west.

A recommended pay plan for 38 pay grades is shown, including six periodic increments of between 4 and 5 per cent each period. Minimum entering grades for the 38 pay grades range from $2,052 to $10,764 annually; maximum from $2,688 to $14,076. The value of various fringe benefits is also analyzed.

Present pay grade and specific pay recommendations are included for the 23 key classes, as well as for numerous related engineering and health classes. Among the "key" classes of interest to public health workers are disease control director, social service director, social worker, sanitarian I, radiologist, x-ray technician, physical therapist, and medical technologist. Among the "related" classes are sanitary engineer I, II, public health nurse director and grades I, II, III, IV, V, director of special medical services, psychiatrist, dentist, bacteriologist, biochemist, laboratory technician I, II, III, health education director, health educator, public health veterinarian, sanitarian II and III, social worker II, III, among others.

The report is presumably available from F. Arnold McDermott, Personnel Director, Career Service Authority, City and County Building, Denver 2, Colo.

Federal Pay and Living Cost Rises

A comparison of the percentage increases in cost of living since 1939 and

in entrance pay rates for 15 grades of federal employees is shown in a chart published by the "Government Standard" of April 27, 1956. To the chart, originally shown in the annual report of the federal Civil Service Commission, the American Federation of Government Employees Research Department has added a column on wages of factory workers based on Department of Labor Statistics.

Except for GS1–3, the lowest paid grades of federal workers classified, employees' salaries have increased less than the cost of living. GS–3 and –4 grades have had increases nearly equalling cost of living. For every succeeding grade, however, the disparity between salary and cost of living increases. The salaries of the GS–15 group have increased by less than half the percentage increase in living costs.

By contrast, factory workers' wages have increased more than twice as much as cost of living. That statement must be understood, however. It does not mean that the factory worker is absolutely four times as well off as the GS–15 group, but only relatively. He may have started and still be absolutely below the level of many of the classified employees.

Sample of Big Business Recruitment

The Iron and Steel Institute, which has 95 member steel companies, has been carrying on a series of newspaper advertisements designed to encourage young people to prepare for jobs in steel. The series has now been published in an attractive booklet "More Steel and More Jobs."

Both the writing and the illustrations emphasize the simple homey things about steel and its products, starting with baby's safety pins. The growth of the industry, the variety of jobs, the relatively good wages, and the workers' satisfactions as evidenced by low turnover are all pointed out as though father and son were having a discussion about the job the growing boy might do. The writer has done a particularly good job in avoiding any attempt to make steel companies sound big and impressive and influential, but without minimizing the importance of the product. Working for steel is a happy job with satisfactions and rewards. The ideas in the brochure could be used effectively in developing recruitment material in the health field.

Michigan Municipal Salaries

The Michigan Municipal League has published the 13th in a continuing series of compilations on municipal salaries and wages, as well as fringe benefits and other employee pay practices. Data are shown for 115 cities with populations of 4,000 or more.

The health series includes a health director, three grades of public health nurses, milk, meat, food, and sanitation inspectors, three grades of hospital nurses, hospital superintendent, and laboratory technician.

The text indicates that during the year over-all municipal salaries have increased 4 per cent. The wage differentials for four different areas of the state run from about 10 to 20 per cent to 40 to 50 per cent.

Information Bulletin No. 76, Michigan Municipal League, 205 S. State St., Ann Arbor; $3.50.

Cars for Nurses

In "Automobile Transportation for Public Health Nurses" the September issue of "Nursing Outlook" summarizes the current situation with what is described as "the second largest item in the nursing budget"—transportation. The ownership of automobiles and the various reimbursement plans for nurse-owned cars are discussed in detail.

"Nursing Outlook," the official magazine of the National League for Nursing, is published by the American Journal of Nursing Company, 2 Park Ave., New York 16, N. Y.; 50 cents per copy, $4 annual subscription.

Training Opportunities

Interdisciplinary Research Training

"Because the need for comprehensive research training in the field of mental health research remains acute" the Foundations' Fund for Research in Psychiatry has initiated a grant program "to assist in the development of highly qualified investigators in the mental health field."

The three-part program consists of advanced fellowships, summer stipends for medical students, and funds for staff appointments. The advanced fellowships may be for advanced research training in the investigator's own scientific discipline, or training may cut across disciplines in order to broaden the area of the fellow's research competence, or psychoanalytic training for research purposes.

For staff appointments assistance is provided for the appointment of research staff, primarily of an interdisciplinary nature, for periods up to seven years, and for the appointment of a few research professors in departments of psychiatry.

Summer stipends are awarded to medical students through their medical schools to introduce them to research in psychiatry and relevant basic sciences.

The program is made possible by a grant from the Ford Foundation of $3,682,000 which is to be committed during a five-year period. Chairman of the Foundations' Fund Board of Directors is Frederick C. Redlich, M.D., chairman and professor of the Department of Psychiatry, Yale University School of Medicine.

Applications were first accepted in mid-September, 1956, and early application is urged, usually about a year before the beginning of the fellowship. Fellowships are awarded for varying periods averaging about three years. Stipends are on an individual basis, "adequate to enable the fellow, without financial sacrifice, to devote himself to full time training that will contribute maximally to his future research career." No funds are provided for overhead costs in the institutions in which the fellow receives his training.

In the first letter applicants should describe their background and previous training, research interests, type of research training desired, and if possible the institution in which training is desired. This should be sent to Executive Officer, Foundations' Fund for Research in Psychiatry, 251 Edwards St., New Haven 11, Conn.

Tuberculosis Training Fellowships

The American Trudeau Society, the Medical Section of the National Tuberculosis Association, announces a limited number of fellowships to make possible continuation of graduate study in the field of respiratory diseases in an approved hospital or medical center. Such studies may be oriented toward teaching or research. Citizens with a doctorate degree are eligible for awards for work within this country. An applicant must have the approval of the head of the department under whom he expects to work.

The amount of the award is determined by individual circumstances and is paid directly to the fellow on a quarterly basis. Fellowships are granted for one year, with not more than two possible renewals. Fellowship applications must be received by January 1. Appointments may begin on any date convenient for the applicant.

Predoctoral fellowships are also offered to graduate students who hold a bachelor's degree and are working on a

research project for an advanced degree other than an M.D. Further, a few fellowships at a higher level of training and award are offered to specially qualified physician candidates who have been assured of a continued teaching or research appointment upon completion of training. These Trudeau Fellowships are awarded for one year, but may be renewed up to a total period of four years.

Further details from the Director of Medical Education, American Trudeau Society, c/o The Henry Phipps Institute, Seventh and Lombard Streets, Philadelphia 47, Pa.

NFIP Grants to Scholars and Schools

The National Foundation for Infantile Paralysis, through its Division of Professional Education, again announces its grant-in-aid program to professional schools. Grant-in-aid programs to colleges, universities, professional associations, institutions, and agencies are designed to increase the number of qualified professional personnel, help improve standards of education and practice, and provide specialized educational programs for professional persons concerned with care of patients. Funds are available for the cost of professional staff, equipment, supplies, materials, retirement, and insurance plans, but not for construction.

Applications for grants are considered in the spring and fall. The respective deadlines for receiving applications are January 1 and July 1 of each year.

Postdoctoral fellowships are available to individuals either in research, in medicine and related biological sciences, or in clinical fields—preventive medicine, rehabilitation, orthopedics, psychiatry, and management of poliomyelitis.

Applications for fellowships to be considered in May, November, and February must be submitted by March 1, September 1, and December 1, respectively.

Detailed information and application forms from the Director, Division of Professional Education, National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

An illustration of a grant made to an agency as an aid to professional education is a recent grant of $78,553 to the National League for Nursing in support of its efforts to improve nursing care for patients with poliomyelitis and other diseases that lead to a need for rehabilitation. The funds, according to Anna Fillmore, general director of NLN, will further the work of incorporating into the basic nursing curriculum, as well as in the preparation of qualified nursing teachers, a real understanding of the technics of rehabilitation.

Air Pollution Training Grants

The Public Health Service, in accordance with the Air Pollution Research and Technical Assistance Act of 1955, is ready to receive grant applications for training of professional personnel engaged in the prevention and abatement of community air pollution. The purpose of the program is "to increase the number, competence, and knowledge of such personnel."

Grants are made to state and local air pollution control agencies for training of their own personnel or to educational and training institutions to develop and support new curriculums. Grants are made to individuals for specialized training in the field of air pollution.

In order to be eligible for aid any personnel that an agency wishes to train must be a citizen, must hold at least a bachelor's degree, and must be accepted by a training institution before the sponsoring agency applies for a grant. The grant is paid in a lump sum to the

sponsoring agency and is designed to cover tuition and fees, travel, and subsistence allowances.

Citizenship is also required for the individual applicant for a training grant as well as acceptance by a training institution. Annual stipends for the postdoctoral, postmaster's, and postbachelor's degree candidates are, respectively, $4,800, $3,600, and $3,000, with additional allowance for dependents, and with possibility of a different level of stipend in cases of unusual need.

Institutions wishing assistance to develop air pollution control courses at the graduate level may also apply for grants which are paid on an annual lump sum basis.

April 1 is the deadline each year for receiving applications for grants covering the following academic year. Application forms may be obtained from any Regional Office of the Public Health Service or from the Chief, Division of General Health Services, Public Health Service, Washington 25, D. C.

Postdoctoral Study in Statistics

The Committee on Statistics of the University of Chicago offers awards for postdoctoral study in statistics to persons whose primary field is one of the physical, biological, or social sciences to which statistics can be applied. The awards range from $3,600 to $5,000 on the basis of an 11-month residence. February 15, 1957, is the closing date for application for the academic year 1957–1958. Further information from the Committee on Statistics, Eckhart Hall, University of Chicago, Chicago 37, Ill.

$300 Sanitary Science Scholarship

The International Association of Milk and Food Sanitarians has established an annual $300 scholarship to be awarded to an outstanding student in the junior year, who is pursuing a course in public health engineering and sanitary science in one of the approximately 16 universities presently offering four-year courses in this subject. The award was announced and the first presentation made during the 43rd Annual Meeting of IAMFS in Seattle in September. Thaddeus E. Midura, a student majoring in sanitary science and public health engineering at the University of Massachusetts, was the first recipient.

Preclinical Sciences Investigators

A program "designed to attract and hold able investigators in the preclinical sciences" is now in operation by the National Institutes of Health. Under this Senior Research Fellowship program 40 to 50 awards are being made the first year to medical, dental, and public health schools. The awards will be increased by a like number annually for five years until a total of 200 to 250 are made annually. No school may make more than three applications per year. The awards may reach a maximum of $10,000 a year and may be retained up to five years.

Detailed information from Chief, Research Fellowship Program, Division of Research Grants, National Institutes of Health, Bethesda 14, Md.

Industrial Medicine Fellowships

The Atomic Energy Commission announces fellowships for advanced training and on-the-job training in industrial medicine. An academic year will be followed by a year on the job in one or more of the AEC contractor installations, such as Oak Ridge, Los Alamos, or Richland. Physicians who have graduated from an approved school of medicine at least two years earlier and are licensed to practice medicine in one of the states are eligible.

Applications should be filed before January 1, 1957. Fellowships will begin in the summer or fall of 1957. Stipends for the academic year are $3,600

plus $350 for each dependent, tuition, laboratory fees, and certain other expenses. Stipend for the in-plant year is $6,000.

Address all inquiries to: Dr. Henry A. Blair, A.E.C. Fellowships in Industrial Medicine, University of Rochester, School of Medicine and Dentistry, Rochester 20, N. Y.

Cancer Society Research Grants

The American Cancer Society announces that application forms for grants in support of research and of personnel for research will be available early in November, 1956. Applications received by the Society by January 1, 1957, will be acted on during the late winter and early spring and recommended grants will normally become effective July 1, 1957. Grants will be available for projects, program, institutional research, contracts for research, postdoctoral fellowships, for scholars in cancer research, and for additional faculty-level positions.

The Society, in support of research to increase knowledge about cancer, can distribute at least $7,000,000 in 1957 to individual scientists and research institutions prepared to investigate problems pertinent to cancer control. The research program has been reorganized and is being guided by the Society's committees and a staff under the direction of Harry M. Weaver, M.D., administrator for research. Heretofore grants were made on the advice of the National Research Council's Committee on Growth.

Application forms and further information from the American Cancer Society, 521 West 57th St., New York 19, N. Y.

ANA Studies Public Health Nursing

The American Nurses' Association, through a grant to the Association's American Nurses' Foundation by the National Institutes of Health, is studying public health nursing in the New York-New Jersey area. The particular focus is nurse-patient relationships and factors that affect the public health staff nurse in carrying out her duties. The study will later be extended to the rural South or Midwest, according to present plan.

Credit Lines

The Journal cannot furnish copies of items mentioned in Credit Lines. Please send requests to the addresses given.

A Connecticut Study for Action

What may turn out to be a pioneer development is going on in a state that has long since passed its pioneering days in the usual sense. In the lower Naugatuck Valley of Connecticut five towns with a total population of about 56,000 have been seriously discussing forming a town health union. "Public Health in the Cities and Towns of Ansonia, Derby, Oxford, Seymour, and Shelton," just published, is a study made by Yale's Department of Public Health under Professor Ira V. Hiscock's direction. The cooperating agencies were the state health and six other state departments, three voluntary health agencies, and numerous local advisory committees.

The basic recommendation is for a single full-time health department for these towns that form a natural community. But it is further recommended that the Citizens Advisory Committee be continued as a Citizens Action Committee to follow up the survey in the interest of developing a more adequate public health program for the five towns.

Connecticut has had a permissive law authorizing town unions for nearly 40 years; since 1947 state aid has been authorized. Nevertheless, this is the first group of towns that has moved this far toward a union health department. The survey has highlighted some of the unfavorable conditions—a higher infant mortality than the state average, poorer housing conditions, incomplete reporting of communicable diseases, more than the area's "share of rheumatic fever, tuberculosis, sanitary problems . . . and more than the necessary amount of mental illness and of accidents." The study also has provided a focus for the growing interest of citizens and points up their responsibility "to decide for themselves whether or not they shall have an efficient and comprehensive health department."

Is This a Recruitment Technic?

A project, small but pregnant with possibilities both for health education and recruitment, is being carried on in two high schools of Quincy, Ill. It was started by the high school seniors themselves, but is now being continued cooperatively by the Adams County Health Department and the County Medical Society. The small balance in the treasuries of the senior classes was turned over to the Medical Society which erected a permanent health exhibit for each of the two high schools. The exhibits will be kept up to date by the Health Education Bureau of the County Health Department.

Mental Health Book Review Index

The American Library Association, through a subcommittee on book appraisal of the Association's Adult Education Board, has begun the semiannual publication of a Mental Health Book Review Index. The annotated index, alphabetical by author, includes books in psychology, psychiatry, and psychoanalysis. Listed are the references to the reviews that have appeared in scientific periodicals. In order to be included in the index a book must have been reviewed in at least three of 54 technical

journals in the mental health field that are indexed. The indexes are published as supplements to the Psychological Newsletter.

The first issue, January–February, 1956, began with January, 1955, and includes earlier issues of volumes then current. The chairman of the committee is Margaret M. Kinney, chief librarian, VA Hospital, Bronx, N. Y.

The index is available free to libraries on request; 50¢ an issue to others. Lois Afflerbach, Paul Klapper Library, Queens College, Flushing 67, N. Y.

State Health Council Roundup

In March, 1956, the National Health Council, with the assistance of the Milbank Memorial Fund, sponsored what was called a consultation on state health councils. Here for two days some 20 active state council people shared their hopes and problems with each other. The results have been written up—and most readably—in an attractive 36-page pamphlet, "Round Table on State Health Councils." In effect this offers guidelines for state health councils—how and why they are organized, who belongs, how staffed and financed, what some useful programs have been and can be, how a state council is related to local councils, and what it can do about legislation.

Yolande Lyon, who also planned and directed the consultation, is the author. Together with her earlier "Stepping Stones to a Health Council," there is now no lack of "know-how" for any group that wants to develop a council as a means for better health service. National Health Council, 1790 Broadway, New York 19, N. Y.; 50 cents.

Statistics for Planning

Among the many neglected sources of morbidity and health service data is the experience of recipients of public assistance. The medical director of the Rhode Island Department of Social Welfare has taken advantage of the state's experience with the pooled fund method of payment for medical care services to offer a report which tells many things about the quantity, cost, and distribution of the services rendered. There is a brief explanation of the philosophy, extent, and limitations of the services provided. Included is a frequency distribution by diagnostic category.

Respiratory diseases lead the hospitalization list, with accidents in tenth place among Rhode Island public assistance recipients. But cardiovascular diseases call for almost one-quarter more physician visits than respiratory diseases; allergic, endocrine, and metabolic disorders result in three times as many doctors' visits as accidents and related causes. There is other interesting news for health planners and health insurance actuaries in "Medical Care for the Federally Aided Categories of Public Assistance Recipients in Rhode Island—Experience with a Pool Fund During the Fiscal Year 1954–1955" by P. Joseph Pesare, M.D., medical director, and J. T. Tierney, assistant to the medical director, Department of Social Welfare, State of Rhode Island and Providence Plantations.

References on Heart Disease

The Heart Disease Control Program of the Public Health Service has issued a new publication in the heart disease field, "Selected References on Cardiovascular Disease." This annotated bibliography compiled as a time-saving guide for nurses has use also for medical students, nutritionists, health educators, social workers, and others in the health field. References are arranged according to major interests such as Rehabilitation, Emotional Aspects, and Patient Education. Films and other

audiovisual aids are also listed in the booklet. Public Health Service Publication No. 472, Government Printing Office, Washington 25, D. C.; 25 cents.

Atmospheric Pollution Instrumentation

"Instruments for the Study of Atmospheric Pollution" (2nd ed.), has been prepared by the Committee on Air Pollution Control of the American Society of Mechanical Engineers. It provides reliable information on the instruments in general use in various phases of air pollution control work, together with the names of the manufacturers. The 30-page, loose-leaf report lists instruments for the study of air pollution under various classifications, such as smoke density, particulate matter, gases, vapors, and liquids. More than 200 manufacturers or suppliers are listed. American Society of Mechanical Engineers, 33 West 39th St., New York 18, N. Y.; $2.

An Annual and a Century Report

Because the Louisiana State Board of Health completed its first century in 1955, its biennial report for 1954–1955 is a centennial issue, devoting about a fifth of its space to the board's history. The definitive history and chronology are here put down by Ben Freedman, M.D., director, Public Health Training Center, State Department of Health.

It is interesting to note that as early as 1817 and again in 1821 the state legislature passed an act creating a New Orleans Board of Health, each of which was repealed through the influence of powerful commercial interests. Numerous other attempts to create a functioning board of health were frustrated until 1852 when a yellow fever epidemic and panic finally gave rise to a Sanitary Commission for the city and parish. The State Board of Health followed in 1855.

Dr. Freedman's article is liberally illustrated with reproductions of early documents and drawings. In addition to Dr. Freedman's article, each division head picks up a brief history of the developments in his area. The whole is a real contribution to the history of public health in a section of the country where yellow fever was epidemic for many years.

Children's Bureau Story Simply Told

By way of acquainting everyone the country over with the Children's Bureau—how it came to be, what its purpose is and how carried out, what its relation to other branches of the federal and to state governments is, and what its current program is, "Your Children's Bureau" has just been published by the bureau. It is illustrated with real stories of services that have been provided for real children. There is a notable emphasis upon the whole child, upon stimulating local action in behalf of children, upon working with other groups.

In looking ahead the bureau sees the need to raise the economic base of family living, for more research on the causes and treatment of children's physical, emotional, mental, and social illness, more trained workers, new patterns of service—in fact "much unfinished business to be done for children."

U. S. Gov. Ptg. Office, Washington 25, D. C.; 25 cents.

Mental Health Films

A mental health film library of five films has been produced for Smith, Kline, and French Laboratories. They are "Search for Sanity" (1954), "Alcoholism: The Revolving Door" (1955), "We, the Mentally Ill" (1955), "Child Behind the Wall" (1956), and "The Lengthening Span" (1956). These 30-minute documentary kinescopes of SKF's March of Medicine Series, made with the cooperation of the American

Medical Association, are available without charge to groups dealing with mental health problems.

Smith, Kline, and French has also obtained prints of three mental health films from other agencies, which it is making available for civic and public health meetings. These films "illustrate some of the spontaneous and dramatic steps being taken in the field of mental health." They are "50,000 Responsibilities," the story of Governor Leader's visits to some of Pennsylvania's mental institutions and the resultant emerging change-over from custody to care; "Crisis in West Virginia," and "In a Strange Land," produced by the Hogg Foundation for Mental Hygiene of the University of Texas in cooperation with the Texas Junior Chamber of Commerce. Each of these is 16 mm black and white with a running time of about 25 minutes.

Requests for borrowing any of these eight films should be sent to the Film Center, Smith, Kline, and French Laboratories, Philadelphia 1, Pa.

Medical-Identification Proposed

A medical-identification card with a complete medical history—what was done, when, and what for—is proposed in an article in the Saturday Evening Post of June 16 by I. Phillips Frohman, M.D. He suggests that a joint committee, representing the medical professions, be appointed to draft an appropriate card and universal medical code that would everywhere be understood by doctors. All pertinent information could be entered on a folding card small enough to fit in a wallet.

Dr. Frohman believes that as a result, "the doctor, seeing an emergency patient for the first time, will not be fumbling in the dark with the patient's life in the balance." Today's patients, he believes, "are neither uninformed about medicine nor overawed by doctors, who should stop treating their patients like backward children, morons, or security risks."

Health Insurance in Canada

Health insurance is now a well established social institution, but citizens of Canada, and even of the United States, still engage in discussion and debate about the extent of its application and the method of payment for its benefits. In "Health Insurance—What Are the Issues?" the Canadian Welfare Council has contributed a calm and objective little manual designed "to help clarify public thinking on this important and immediate (for Canada) problem." Existing plans and proposals are briefly described with indications of their assets and their problems. Included is a set of questions for discussion groups. Copies of this 60-page, attractively printed booklet are available from Canadian Welfare Council, 55 Parkdale Ave., Ottawa 3, Ont., $1, discounts for 12 or more copies.

Is the Chicken in Your Pot Safe?

"New York dressed" poultry is the target of an article in the August Red Book Magazine. Written by Ruth and Ed Brecher, it points out the dangers of 30 per cent of poultry on the market that is sold in this way. Further, federal inspection of poultry, unlike that of beef, pork, lamb and other red meats, is voluntary rather than compulsory.

Readers are urged to help in getting laws for adequate and compulsory inspection, such as have been recommended by the Association of State and Territorial Health Officers, the General Federation of Women's Clubs, the AFL-CIO, among others.

Annual Reports

"A Span of Twenty Years in Public

Health" is the 1954–1955 report of the Colorado State Department of Public Health. Its secondary function is "to call attention to the noteworthy fact that this biennium marks the completion of 20 years during which the Department has been under the able leadership of Roy L. Cleere, M.D."

The report is attractively produced in two colors with illustrations. There is a brief summary of the work of each of the divisions and sections.

The Akron Record is an eight-page newspaper that is a 1955 "Report for the People" by the City Health Department. It's complete with editorials, cartoons, crossword puzzles, and pictures of people. Along with these it introduces the workers in the health department. All kinds of activities are reported on in sprightly fashion, including the story of the department's first annual dinner. Here, Ralph E. Dwork, M.D., state health officer, was the principal speaker. Awards for meritorious public health service were given—two gold seal certificates, six red seals, and special recognition to a number of persons and groups. George James, M.D., the then health officer, edited the Record.

The "Ford Foundation Annual Report, 1955," summarizes the various aspects of a philanthropic program under which grants and appropriations were made for a great variety of purposes, some of them directly related to public health, many more indirectly.

Of special interest in the volume, of which no part is without interest, is the chapter dealing with the Foundation's interest in the behaviorial sciences. The Foundation's objectives in this field are to increase scientific knowledge of human behavior, to help the behavioral sciences become more useful in the solution of human problems, and to develop personnel and institutional resources for work in this field. In this area is an extensive program of research in mental health for which $15,000,000 have been appropriated for use over a period of perhaps a decade. A program for recruitment and training of research personnel is also in the making.

Advancement of education, of raising college faculty salaries, aid to medical schools, merit scholarships, and other methods have been by far the largest program of the Ford Foundation. Both inherently and as a stimulant to other contributors this may well have far-reaching effects in many professions. 477 Madison Ave., New York City.

"New Channels for the Golden Years" is the 1956 annual report of the New York State Joint Legislative Commission on Problems of the Aging. The annual reports of this Commission continue to be basic contributions to the philosophy of provision for the aging population. The present report focuses attention on preventive measures — prevention of poverty in old age, of wastage of middle and old age, of needlessly rapid physical and mental decline, and of intergenerational maladjustments.

Reported in this annual accounting is a monumental achievement, the adoption by the 1956 Legislature of a comprehensive program of legislation to aid the aged, reportedly "a solid base from which to go forward in enriching the later years of life."

Copies of the report are available from State Senator Thomas C. Desmond, Chairman, 94 Broadway, Newburgh, N. Y.

Worth Acquiring

Food models in full color showing life-sized photographic reproductions of actual foods are available from the National Dairy Council. Included on a dozen large cards are 171 pictures of different foods and different ways of serving them, each tabbed as to quan-

tity. These can be cut out and set upright for teaching purposes. These represent an excellent visualization of quantities of various foods.

Included is a catalog of health education materials, two booklets, "A Girl and Her Figure," and ". . . and She Does It So Easily and Well," the latter designed for the young bride eager to plan, prepare, and serve delightful, healthful meals with ease and efficiency. National Dairy Council, 11 N. Canal St., Chicago 6, Ill.

"Educational Portfolio on Menstrual Hygiene" is designed for classroom use by teachers in hygiene, physiology, and physical education classes and for use by mothers with daughters. The portfolio contains a "General Guide for Menstrual Hygiene," a poster on the physiology of menstruation, and four booklets, "How Shall I Tell My Daughter," "Sally, Mary, and Kate Wondered," "Growing Up and Liking It," and "It's So Much Easier When You Know." The emphasis is on menstruation as a natural process, cobwebby old wives' tales about which have no place in the world of today's growing girl. Personal Products Corporation, Box 121, Milltown, N. J.; free.

Polio Management and Rehabilitation

Baylor University College of Medicine, Southwestern Poliomyelitis Respiratory Center, and the Jefferson Davis Hospital, in cooperation with the National Foundation for Infantile Paralysis, Inc., announce their fourth postgraduate course for physicians, nurses, medical social workers, and physical and occupational therapists on "Practical Management of Poliomyelitis and Principles of Rehabilitation," February 25–March 1, 1957. The course will cover complete care of poliomyelitis with emphasis on the severely involved patient, the effective coordination of services, and the principles of rehabilitation.

Tuition fee is $25. Further details from Dr. William A. Spencer, Medical Director, Southwestern Poliomyelitis Respiratory Center, Education Office, 1300 Kenwood Lane, Houston, Tex.

How to Find What Health Education Materials You're Looking For

The National Publicity Council for Health and Welfare Services, Inc., 257 Fourth Ave., New York 10, N. Y., in cooperation with the American Public Health Association and the National Health Council, has enlarged and brought up to date the earlier edition of "How to Find What Health Education Materials You're Looking For." Included is an outline designed to guide public health workers, especially those engaged in public health education, and in health publicity, to make the best use of available channels of information. This material was first published in the Journal of August, 1944, and was later revised in January, 1948. Reprints of the present listing based on the statements of those organizations replying to a query, will be available from each of the cooperating agencies probably about December 1.

Each year the National Publicity Council and to a lesser extent the other two agencies mentioned above, are on the receiving end of hundreds of requests for sources of ready-made health education materials. We are always glad to get them. To our way of thinking, every leaflet, motion picture, radio script or exhibit produced on a health subject is a potential asset to every agency in the field. The wider the knowledge of available material, the less duplication there will be and—even more important—the greater the amount of time, money, and skill freed for other assignments.

This does not mean that other health educators in agencies similar to your own have already turned out exhibits or leaflets that will meet your exact specifications for every conceivable occasion. Rarely will an already finished product be hand tailored to your needs. Very often, however, it will offer you a head start in the shape of valuable suggestions for an adaptation of your own.

Even the materials produced by national agencies for local imprint will probably not fill your total requirements for the year. They may, however, meet a significant proportion of your needs, releasing your time for the production of more specialized materials designed to fit a particular local situation.

How much use you make of other agencies' materials depends upon your ability to find out what is available. How you ask for information is almost as important as whether you ask at all.

Assuming that you have a plan and a thought-out purpose behind each request for a film, exhibit, or transcription, you will get better results if you explain the plan when you make your request.

It is not enough, for example, to request "a leaflet on rheumatic fever." You may get an excellent pamphlet. But it might be addressed to mothers, explaining home care; it might be an explanation of the reasons behind the doctor's instructions; it might be a general discussion of the prevalence of

the disease. And perhaps what you really wanted was an appeal for more hospital beds.

On the basis of our own experience, therefore, we have prepared this brief summary of the kinds of details that any agency would probably need before it could fill your requests satisfactorily.

If You Want a Leaflet

Tell us how you are going to use it. What points should it emphasize—i.e., prevention, early diagnosis, treatment or community action? To whom will it be distributed? How many copies will you need? Have you any special requirements as to size, cost, etc.?

If You Want a Radio Program

Do you want a script or a transcription? What main points should it cover? Do you want a 5, 15, or 30 minute program? Do you plan for a talk, an interview, a round table, or a dramatization? If a dramatic script, will you have the services of a professional cast and director or must it be suitable for amateur production? Will it be part of a series? If so, what characteristics of other scripts in the series should it match? Are you willing to pay a small fee which some agencies charge for copies of their scripts?

If You Want a Film

Do you want to buy or rent it? When, where, and to whom do you plan to show it? Is your projector 16 or 35 mm., sound or silent? If we cannot find exactly what you want, will you be able to use a film on a related subject and tie it to your theme with a talk? How long a film do you want? If you want a TV film, state clearly the time that you have available. Is it a 15 or a 30 minute show?

If You Want an Exhibit

What kind of people will see it—i.e., doctors, nurses, industrial workers, school children, or the public at large? Will it be alone or part of an exposition? How much and what kind of space do you have—wall space, table tops, store windows? What single message do you want the exhibit to carry? If there is no loan exhibit that suits your purpose, have you enough time to build your own on the basis of suggestions we send you? If so, how much money do you have to spend? Can you count on the services of an artist, a photographer, or both?

Whatever You Want

Tell us the "who, what, when, where, why," as you would in a newspaper release. Remember that if we are working in the dark we probably will not hit the bull's eye.

Whom to Ask

Naturally you are familiar with the resources of your own city and state health departments and of other local agencies in your community. Frequently, however, state departments and associations other than your own are willing to make their material available to you. On the national level, federal departments, voluntary agencies, and commercial companies are a fertile source of useful material.

The partial list of national sources that follows is currently up to date. We have made no attempt to list specific materials offered by these sources, but in many cases catalogs are available and in most cases the name of the agency will indicate the subject matter and scope of its material. It should be understood that not all of these materials are free.

NATIONAL SOURCES OF MATERIAL

Abbott Laboratories
14th and Sheridan Road, North Chicago, Ill.
Recipe books for the overweight or diabetic.

American Association for Health, Physical Education, and Recreation
1201 Sixteenth Street, N.W., Washington 6, D. C.
Pamphlets, lists, and movies.

American Camping Association
Bradford Woods, Martinsville, Ind.
Pamphlets, Directory of Camps for the Handicapped, camp physical examination and health record forms.

American Cancer Society
Director of Public Education
521 W. 57th Street, New York 19, N. Y.
Films, pamphlets, posters, exhibits, TV materials, radio scripts, and transcriptions.

American Committee on Maternal Welfare
116 S. Michigan Avenue, Chicago 3, Ill.
Reprints from "The Bulletin of Maternal Welfare."

American Council to Improve Our Neighborhoods (ACTION)
2 W. 46th Street, New York 36, N. Y.
Pamphlets, listings, films.

American Dental Association
Bureau of Dental Health Education
222 E. Superior Street, Chicago 11, Ill.
Pamphlets, charts, posters, models.

American Diabetes Association
1 E. 45th Street, New York 17, N. Y.
"A.D.A. Forecast," bimonthly magazine, reprints, pamphlets.

American Dietetic Association
620 N. Michigan Avenue, Chicago 11, Ill.

American Eugenics Society
230 Park Avenue, New York 17, N. Y.
Pamphlets, reprints—"Eugenics Quarterly" Journal.

American Foundation for Allergic Diseases
274 Madison Avenue, New York 16, N. Y.
Pamphlets.

American Hearing Society
817–14th Street, N.W., Washington 5, D. C.
Pamphlets, posters, reprints of articles from "Hearing News."

American Hospital Association
Director of Public Relations
18 E. Division Street, Chicago 10, Ill.
Pamphlets, kits of sample hospital publications, films, radio transcriptions, National Hospital Week materials.

American Heart Association
Inquiries Section
44 E. 23rd Street, New York 10, N. Y.
Films, slide films, pamphlets, posters, exhibits, list of publications.

American Institute of Baking
Consumer Service Department
400 E. Ontario, Chicago, Ill.
Pamphlets, posters (classroom quantities free).

American Medical Association
Bureau of Health Education
535 N. Dearborn Street, Chicago 10, Ill.
Films, pamphlets, posters, exhibits, radio transcriptions, television scripts, packets, lists, and the magazine "Today's Health."

American National Red Cross
Office of Public Information
Washington 13, D.C.
Films, pamphlets, posters, exhibits, radio scripts, transcriptions, catalogs, lists.

American Nurses' Association
Public Relations Department
2 Park Avenue, New York 16, N. Y.
Pamphlets, reprints, films, slide films, booklets.

American Occupational Therapy Association
250 W. 57th Street, New York 19, N. Y.
Pamphlets, posters, radio scripts, slide films, exhibits, lists, movies, TV spots, technical reprints, manuals of professional interest.

American Optometric Association, Inc.
4030 Chouteau Avenue, St. Louis 10, Mo.
Pamphlets, posters, radio scripts, slide films, TV scripts and film shorts, exhibits.

American Physical Therapy Association
1790 Broadway, New York 19, N. Y.
Pamphlets, posters, radio and TV scripts, slide films, exhibits, catalogs, movies, magazine articles, monthly journal.

American Public Health Association
1790 Broadway, New York 19, N. Y.
Reports on education qualifications of health workers, community survey guide, list of publications and reprints.

American Social Hygiene Association
Division of Public Information
1790 Broadway, New York 19, N. Y.
Pamphlets, exhibits, lists.

Arthritis and Rheumatism Foundation
Director of Public Information
23 W. 45th Street, New York 36, N. Y.
Pamphlets, posters, radio scripts, transcriptions, film.

Association for the Aid of Crippled Children
Division of Publications and Public Education
345 E. 46th Street, New York 17, N. Y.
Pamphlets, reprints, exhibits, lists, movies, books.

Association of American Soap and Glycerine Producers, Inc.
Cleanliness Bureau
295 Madison Avenue, New York, N. Y.
Pamphlets, posters, radio and TV scripts.

Association Films, Inc.
347 Madison Avenue, New York 17, N. Y.
Pamphlets, posters, catalogs, movies.

Association for Physical and Mental Rehabilitation
1472 Broadway, New York 36, N. Y.
Pamphlets, reprints, a journal.

Better Vision Institute, Inc.
630 Fifth Avenue, New York 20, N. Y.
Pamphlets, slide sound films, movies.

Borden Company
Consumer Services
350 Madison Avenue, New York, N. Y.
Pamphlets.

Bristol-Myers Company
Educational Service Department
630 Fifth Avenue, New York, N. Y.
Pamphlets, posters.

Center for Mass Communication, Columbia University Press
1125 Amsterdam Avenue, New York 25, N. Y.
Films, pamphlets, posters, radio scripts, transcriptions, records, comic books.

Cereal Institute, Inc.
Educational Director
135 S. LaSalle Street, Chicago 3, Ill.
Elementary and high school classroom teaching units.

Child Study Association of America
132 E. 74th Street, New York 21, N. Y.
Pamphlets, publication and book lists.
Leaflet on organizing a parent education program.

Cleveland Health Museum
8911 Euclid Avenue, Cleveland 6, Ohio
Maintains workshops for creating exhibits to be loaned; Dickinson-Belskie life-size models on human reproduction, illustrations, and photo-service.

Committee on Careers
National League for Nursing
2 Park Avenue, New York 16, N. Y.
Pamphlets, posters, radio scripts, slide films, cartoons, exhibits, lists, movies.

Common Cold Foundation
370 Lexington Avenue, New York 17, N. Y.
Reprints, list of publications.

Encyclopaedia Britannica Films, Inc.
Public Relations
1150 Wilmette Avenue, Wilmette, Ill.
Slide films, cartoons, movies.

Equitable Life Assurance Society of the United States
Bureau of Public Health
393 Seventh Avenue, New York 1, N. Y.
Booklets, posters, related material.

Evaporated Milk Association
Nutrition Service and Home Economics Department
228 N. LaSalle Street, Chicago 1, Ill.
Pamphlets, charts, posters.

Films Incorporated
Public Relations
1150 Wilmette Avenue, Wilmette, Ill.
Cartoons, catalogs.

Florida Citrus Commission
Lakeland, Fla.
Pamphlets, posters, movies.

General Mills
Education Section, Department of Public Services
400 Second Avenue, S., Minneapolis 1, Minn.
Nutrition-education teaching aids.

Health Information Foundation
Public Relations Director
420 Lexington Avenue, New York 17, N. Y.
Pamphlets, bulletins, transcriptions, films.

Hemophilia Foundation
175 Fifth Avenue, New York, N. Y.
Pamphlets.

John Hancock Mutual Life Insurance Co.
Health Education Service
200 Berkeley Street, Boston 17, Mass.
Pamphlets, lists.

Johnson & Johnson Baby Products
Educational Division, New Brunswick, N. J.
Pamphlets, charts, films.

Kimberly-Clark Corporation
Educational Department
Neenah, Wis.
Menstruation program: films, pamphlets, teaching guide, menstrual physiology chart. Cold program: films, posters, health pledge for grades 2, 3, 4.

Maternity Center Association
48 E. 92nd St., New York 28, N. Y.
Pamphlets, posters, charts.

Mental Health Materials Center
1790 Broadway, New York 19, N. Y.
Family life, mental health, human relations —pamphlets, films, plays.

Metropolitan Life Insurance Company
Health and Welfare Division
1 Madison Ave., New York 10, N. Y.
Pamphlets, exhibits, films, film strips, catalogs.

Muscular Dystrophy Associations of America, Inc.
Public Information Department
1790 Broadway, New York 19, N. Y.
Pamphlets, reprints, films, radio scripts, exhibits, TV clips.

National Association for Mental Health
Director of Education and Program Services
10 Columbus Circle, New York 19, N. Y.
Pamphlets, posters, radio scripts, transcriptions, catalogs, exhibits, films, dramatic sketches.

National Association for Retarded Children
99 University Place, New York 3, N. Y.
List of publications.

National Association of Social Workers
Medical Social Work Section
1 Park Avenue, New York, N. Y.
Pamphlets, posters, slide film, exhibits.

National Committee on Alcoholism
Publications Division
2 E. 103rd Street, New York 29, N. Y.
Pamphlets, reprints, books, films, posters, exhibits, radio scripts.

National Congress of Parents and Teachers
700 N. Rush Street, Chicago, Ill.
Articles in National Parent-Teacher, The P.T.A. Magazine.

National Dairy Council
Program Service Department
111 N. Canal Street, Chicago 6, Ill.
Health education materials catalog listing booklets, posters, films, filmstrips, exhibits, displays.

National Epilepsy League
130 N. Wells Street, Chicago 6, Ill.
Quarterly newspaper "Horizon." Pamphlets.

National Fire Protection Association
Public Relations Department
60 Batterymarch Street, Boston 10, Mass.
Pamphlets, posters, lists, comics, inspection blanks.

National Foot Health Council
Phoenix Building, Rockland, Mass.
Pamphlets, posters, radio scripts, cartoons, children's foot size charts.

National Foundation for Infantile Paralysis
Director of Public Education
120 Broadway, New York 5, N. Y.
Pamphlets, booklets, films, filmstrips, exhibits, bibliographies.
(After February 1, 1957, 301 E. 42nd Street, New York 17, N. Y.)

National Health Council
1790 Broadway, New York 19, N. Y.
Pamphlets, reprints, leaflets, list of publications, health career materials.

National Heart Institute
Heart Information Center
Bethesda 14, Md.
Pamphlets, etc.

National Institute of Mental Health
Bethesda 14, Md.
Catalog, literature, films, transcripts, exhibits.

National League for Nursing, Inc.
Director of Public Relations
2 Park Avenue, New York 16, N. Y.
Leaflets, pamphlets, reprints, bibliographies, books, handbooks, posters, films, slides.

National Multiple Sclerosis Society
Public Relations
270 Park Avenue, New York, N. Y.
Pamphlets, radio scripts, radio and TV spot announcements, medical manuals, fact sheets.

National Publicity Council for Health and Welfare
257 Fourth Avenue, New York 10, N. Y.
Newsletter, library of health education materials.

National Recreation Association
Public Relations Director
8 W. 8th Street, New York, N. Y.
Pamphlets, books.

National Safety Council
Director of Public Information
425 N. Michigan Avenue, Chicago 11, Ill.
Films, pamphlets, posters, cartoons, catalogs.

National Society for Crippled Children and Adults
11 S. LaSalle Street, Chicago 3, Ill.
Pamphlets, radio scripts. Crippled Child Magazine, Bulletin, books, news releases, film and transcription libraries.

National Society for the Prevention of Blindness
Director of Information Service
1790 Broadway, New York 19, N. Y.
Films, pamphlets, posters, exhibits, radio scripts, catalogs, vision testing charts.

National Tuberculosis Association
(Write nearest state or local association)
Films, filmstrips, pamphlets, posters, exhibits, TV spots, radio scripts, transcriptions, catalogs.

National Women's Christian Temperance Union
1730 Chicago Avenue, Evanston, Ill.
Pamphlets, posters, slide films, catalogs, movies, Facts & Features.

Planned Parenthood Federation of America
Director of Public Relations
501 Madison Avenue, New York 22, N. Y.
Pamphlets, posters, exhibits, radio scripts, transcriptions, catalogs, films.

Public Affairs Pamphlets
22 E. 38th Street, New York 16, N. Y.
Popularly written pamphlets on a variety of subjects in health and social welfare field.

Public Health Committee
Paper Cup and Container Institute
250 Park Avenue, New York 17, N. Y .
Reprints, films, Health Officers News Digest, Single Service News, periodicals on food handling and food service sanitation.

Smith, Kline, and French Laboratories
Philadelphia 1, Pa.
Pamphlets, posters, exhibits, films on mental health.

Tampax, Inc.
Educational Director
161 E. 42nd Street, New York 17, N. Y.
Pamphlets, anatomical charts (17" × 22") and model, lists, menstrual health reference material.

United Cerebral Palsy Associations, Inc.
Public Relations Director
369 Lexington Avenue, New York 17, N. Y.
Pamphlets, posters, films, radio transcriptions, etc.

U. S. Children's Bureau
Division of Reports
Washington 25, D. C.
Pamphlets, catalogs, lists.

U. S. Department of Agriculture
Human Nutrition, Research Branch
Washington 25, D. C.
Pamphlets, posters, films on nutrition and food.

U. S. Office of Vocational Rehabilitation
Washington 25, D. C.
Pamphlets, radio scripts, exhibits, lists, movies.

U. S. Public Health Service
Public Inquiries Branch
Washington 25, D. C.
Leaflets and pamphlets.

Volta Bureau
(Headquarters, Alexander Graham Bell Association for the Deaf)
1537 35th Street, N.W., Washington, D. C.
Pamphlets, lists, movies—for deaf and hard of hearing.

Western Electric Company
100 Central Avenue, Kearny, N. J.
Leaflets on good posture and chronic illness.

Wheat Flour Institute
Supervisor of Distribution
309 W. Jackson Boulevard, Chicago 6, Ill.
Pamphlets, posters, film strips, catalogs.

Tobacco Research

The University of Minnesota shares in a $355,000 grant from the tobacco industry research committee for studies on the relationship between the use of tobacco and health. Ancel B. Keys, Ph.D., director of the Laboratory of Physical Hygiene, and Josef M. Brozek, Ph.D., associate professor in the laboratory, are among the researchers sharing the grant. Dr. Keys and Dr. Bronte Steward, assistant professor of medicine at the University of Cape Town, South Africa, will make studies of populations and heart diseases in Japan and Finland, emphasizing the relationship of smoking to such diseases.

Books and Reports

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Accidental Poisoning in Childhood—By Edward Press. Prepared by the Committee on Accident Prevention, American Academy of Pediatrics. Springfield, Ill.: Thomas (301–327 East Lawrence Ave.), 1956. 131 pp. Price, $3.00.

This book is a major contribution to a most difficult field of modern medicine. Intended as a guide to treatment of childhood poisonings, it is equally valuable for treatment of adults.

Section I outlines treatment procedures. Section II contains a useful list of common toxic substances. Section III gives general information on common household products. It cannot be complete, for chemical "tools" are rapidly changing. Even items which are a household "standby" may change in composition almost every week.

In Section I Dr. Press emphasizes two basic tenets in handling of patients who have swallowed noxious materials. "Speedy evacuation of the stomach at the earliest possible moment," determines the outcome of most cases regardless of subsequent therapy. The warning that, "occasionally the treatment or the antidote may, if too vigorously applied, or given in too large doses, cause more harm than the poison itself," cannot be overemphasized. We would substitute "too often" for "occasionally." The tendency to counteract the effects of a "poison," often ill-defined, by numerous selections from the vast list of modern drugs, also often ill-defined as to their total action, has, we believe, caused more harm than the "poison" itself.

This book should be on the desk, not the bookshelf, of every pediatrician and general practitioner and in every hospital receiving room. It might well form the basis of a course in medical schools, for as the home use of chemicals increases, so will the need for intelligent handling of accidental cases of poisoning. JOHN H. FOULGER

Mental Health Planning for Social Action—By George S. Stevenson. New York: McGraw-Hill (330 West 42nd St.), 1956. 358 pp. Price, $6.50.

The author of this book has dedicated a professional lifetime to being helpful to numerous groups, organizations, and agencies who work and plan for mental health. Quite in character, his objective in this book is to be helpful—primarily by presenting a perspective on the broad field of mental health. Also, in unassuming character, he acknowledges that the author, like any one person, has a limited perspective. But Stevenson's "limited" perspective has great range.

The book is divided into five parts. Part one contains basic considerations, including goals, criteria, and steps in mental health planning. The following three parts, about two-thirds of the book, take up the agencies and institutions concerned with the restoration, the protection, and the elevation of mental health. There is description and analysis of the programs of mental hospitals, clinics, government agencies, private psychiatry, the police, the courts, social agencies, health departments, the church, the school, and others. Many of the activities receive brief discussion, but there are useful references at the end of each chapter.

The final part identifies forces influ-

encing program development and includes a chapter on world mental health. A recurring theme is the interdependence of and need for integration of the services described.

The language is clear, simple, and direct. The experienced professional worker can learn from this book, and it should be especially useful to the beginning practitioner and the concerned citizen. JAMES F. MADDUX

General Features of Algal Growth in Sewage Oxidation Ponds—A report by the University of California to the California State Water Pollution Control Board on the investigation of the kinds and abundance of algae in oxidation ponds. Sacramento, Calif.: California State Printing Division, Documents Section, 1955. 48 pp. Price, $.75.

The information contained in this report will be of interest to those technical and professional people concerned with the design and operation of sewage treatment works. A study of this report will no doubt influence the design and operation of oxidation ponds, a secondary treatment process of sewage.

Although oxidation ponds have been successfully used as a secondary treatment process for a number of years, particularly in the Southwest, there has been a need for additional information. Knowledge regarding the types of microorganisms which are most prevalent in oxidation ponds and the conditions influencing their growth and development has been lacking. This report of the investigations carried on under laboratory and field conditions appears to supply this much needed information. It should contribute to improved design and operation of oxidation ponds. However, there is need for further study and investigation regarding additional information on the problems related to the nutrition of oxidation pond algae.

The reviewer hopes that further studies and investigations will be made in the near future. GEORGE W. MARX

The Drug Addict as a Patient—By Marie Nyswander. New York: Grune and Stratton (381 Fourth Avenue), 1956. 173 pp. Price, $4.50.

This book, by a psychiatrist who has had considerable experience with drug addicts, is directed primarily to the physician as a guide or handbook for treatment of the addict patient. Nonmedically trained readers may have some difficulty with the sections on pharmacology, physiology, and psychology and treatment due to the technical language. Dr. Nyswander, while being somewhat critical of past methods of handling the addict in the United States, offers several suggestions for another approach which she terms less punitive and more medical in nature. For this purpose she records the recent (1955) proposals of the Report on Addiction of the New York Academy of Medicine, and presents an unofficial report by an English physician on the methods used in Great Britain. Those readers well grounded in the field of drug addiction will find much of interest in the book. Others, new to the field, should be advised that the author is presenting her own relatively unorthodox though intriguing recommendations. K. W. CHAPMAN

Expert Committee on Health Education of the Public. First Report—World Health Organization Technical Report Series, No. 89. New York: Columbia University Press (2960 Broadway), 1954. 44 pp. Price, $.25.

Workers in all public health disciplines will find in this report a core of basic principles designed to strengthen the health education aspects of all health activities. Throughout the report justifiable emphasis is placed on

the integral relationships and importance of the behavioral sciences in achieving health education goals and in the effective evaluation of health education programs and activities. The guiding principles developed for planning and implementing health education activities and for selecting and using media and methods are psychologically sound and readily applicable to every country and culture.

Realizing that health education always implies working with people wherever they are, the committee focused constantly on the principle of involvement. Although no attempt was made to delineate the details of the subject, enough concrete suggestions are included in each section to explicate the general principles.

Those engaged in the training of public health personnel will profit by reading the section entitled "Training in Health Education of the Public," for it outlines briefly but clearly the need for providing a variety of health education experiences for all types of health workers. MARJORIE A. C. YOUNG

The Flavonoids in Biology and Medicine. A Critical Review—By Maurice E. Shils and Robert S. Goodhart. Nutrition Monograph Series No. 2. New York: National Vitamin Foundation (15 East 58th Street) 1956. 101 pp. Price, $2.00.

Drs. Shils and Goodhart offer a discriminative and careful review of the rather confused literature which has appeared concerning the "bioflavonoids." These substances, long known to occur as pigments in plants, have been thought to affect capillary fragility, capillary permeability and related phenomena in mammals, and are referred to by such names as vitamin P, citrin, rutin, and hesperidin. The review cites references to 299 papers and is divided into two sections, the first of which discusses the action of the bioflavonoids in experimental animals and the second, the reports of their use in clinical medicine in such conditions as retinal hemorrhage, purpura, rheumatic fever, arthritis, and radiation sickness. In general the studies in the literature are found to be conflicting in their conclusions, often inadequately controlled, and usually lacking a statistical treatment of the data presented. The general conclusion of the reviewers is ". . . that there is no convincing evidence for a nutritional role of these substances," while their ". . . pharmacological actions are not unique and are relatively weak as compared to other drugs which are available." The literature has, nonetheless, been carefully and systematically evaluated, and the published results are presented in a number of useful tables.

A. HUGHES BRYAN

The Nurse and the Mental Patient: A Study in Interpersonal Relations—By Morris S. Schwartz and Emmy Lanning Shockley. New York: Russell Sage Foundation (505 Park Avenue), 1956. 248 pp. Price, $3.50.

This book grew out of a research project carried out on the disturbed ward of a small mental hospital. One author, a research sociologist, spent considerable time with the ward staff during 1952–1953 to examine the ways in which nurses relate to patients and to alter these relationships for the improvement of patient mental health. The other author, Emmy Lanning Shockley, a psychiatric nurse and formerly director of nursing education at Chestnut Lodge, has been nursing mental patients and teaching student nurses over a period of ten years.

The book is divided into two parts. The first section deals with such problem situations as these: the nurses' and patients' fears; patient assaultiveness; the demanding, withdrawn, and delusional patient; the patient with suicidal

tendencies and eating difficulties. The second section discusses the interpersonal processes common to these problem situations.

The psychiatric nurse is challenged to provide opportunities that will help the patient grow emotionally, that will meet the patients' specific and concrete needs, that will facilitate the patient's participation with others and the patient's communication, that will increase the patient's comfort and minimize his anxiety, and, finally, she is challenged to be a participant observer.

The nurse as participant observer is the main theme of the book. Traditionally, objectivity in nurse-patient relationships has been emphasized and concentration has been on the nurse as spectator, as collector and recorder of pertinent data, and sometimes as interviewer. But as participant-observer she has a much more complicated role, for she is made aware of her own feelings and emotional involvement and learns to use her own personality as a professional tool.

Case material and actual conference recordings are used to illustrate the subject matter under discussion. The authors suggest that the book can best be used in small discussion groups led by psychiatric nursing educators, supervisors, head nurses, or psychiatrists. In such groups personnel who have the greatest amount of contact with patients can discuss their experiences, compare them with the material presented in the book, and evaluate the usefulness of the authors' approach in understanding the relations with patients in their own nursing situations.

The book is highly recommended. Nurses in every setting—school, industry, child health clinic, general hospital as well as in the psychiatric unit—need to observe carefully their own and their patients' feelings and behavior, need to appraise the therapeutic effects of the procedures being used, and need to explore alternate ways of working with patients. As nurses truly appreciate the importance of their therapeutic role they will continue to enrich their nursing practice with insights from psychiatric nursing such as those in this book.

EDITH HILDEBRAND

Blakiston's New Gould Medical Dictionary. Editors, Normand L. Hoerr and Arthur Osol (2nd ed.). New York: McGraw-Hill (330 West 42nd St.), 1956. 1463 pp. Price, $11.50.

This second edition represents an achievement. It claims 12,000 new terms, 8,000 changes, and spellings and usages modernized throughout.

An editorial board of 88 contributors has been responsible for the text. Many of them are distinguished persons as, for example, the late Robert S. Breed, Ph.D., widely known for his leadership in the field of determinative bacteriology. Many of the distinguished faculty of the Western Reserve Medical School are on the list.

Anyone who tests this volume adequately undertakes a real task. However, it defines such words as "epidemiology" in modern terms, and actually undertakes to define "socialized medicine." The tests which this reviewer was able to apply were all met. The color plates are well done and the printing and paper excellent. The volume can be recommended.

REGINALD M. ATWATER

Cerebral Palsy: Advances in Care and Treatment—By Viola Cardwell. New York: Association for the Aid of Crippled Children (345 East 46th St.), 1956. 625 pp. Price, $5.00.

This is an excellent book, as full of information as an egg is full of meat. The author has attempted the almost impossible task of describing not only the etiology, pathology, and treatment

of cerebral palsy, but also the features and management of the many additional handicaps which may complicate the initial lesion. Full consideration has been given to the educational and psychological aspects and praise must be accorded for the emphasis which the author has laid on the necessity of considering not only the child but his entire environment when outlining treatment.

It is essential to the satisfactory functioning of any comprehensive scheme for the care of the cerebral palsied child that the program include not only the child, but the family circle also.

With so wide a field to cover it is almost inevitable that certain aspects receive less emphasis than their due. Thus, it is a pity that the contribution made by orthopedic surgery to the treatment of the cerebral palsied child is dismissed so casually and that the benefit to be derived from physiotherapeutic treatment is, by contrast, overstressed. While it is to be acknowledged that there is no cure for this condition, orthopedic procedures wisely applied in correctly selected cases will produce a greater degree of physical improvement in a matter of months than can result from any other single method. A procedure such as an arthrodesis of a hip, a stabilization of a foot, or a transplantation of hamstring tendons, in properly selected cases, will produce a spurt of progress or create a state more susceptible to treatment by the other members of the team than would otherwise have been possible. Stabilization of a wrist joint has not only an esthetic value in the athetoid, as in the spastic, but may permit the individual to respond for the first time to education and to therapy. This is not to belittle the importance of the other therapies, rather the reverse, since in the treatment of these handicapped children progress is obtained only by the combined efforts of all members of the therapeutic team.

The concentration of factual findings is weakened somewhat by the lack of emphasis on certain salient points, so that the novice may have difficulty in determining which are the more significant and which the less important symptoms in reaching a diagnosis or determining treatment. The reader might gain the impression that a positive electroencephalogram had as much significance as a stretch reflex in the diagnosis of spasticity, or that, where difficulty was experienced in reaching a definite clinical diagnosis, this might be resolved by a positive electroencephalogram.

These are perhaps carping criticisms in view of the vast amount of information which all chapters in this book contain. Where the field is so wide a future publication by a panel of specialists under the editorship of the present author might highlight the various facets of the problem of cerebral palsy better than one individual, be she ever so erudite.

Miss Cardwell has read extensively, and her references are wide and numerous, so that the facts given make this a book which must be read by everyone interested in the care and management of the cerebral palsied child. GEORGE A. POLLOCK

Composting: Sanitary Disposal and Reclamation of Organic Wastes —By Harold B. Gotaas. World Health Organization, Monograph Series, No. 31. New York: Columbia University Press (2960 Broadway), 1956. 205 pp. Price, $5.00.

For almost as long as man has undertaken cultivation of the soil, he has realized the importance of returning to the soil nitrogenous materials to serve as fertilizers. Manures of all kinds are rich in nitrogen and so have been sought after for fertilizers. From the

public health standpoint it has been realized for many generations that certain disease organisms could be spread through the manure, both of man and other animals. It has been only of recent years that conscientious efforts have been directed toward the utilization of waste materials including manures in a manner that would conserve the fertilizing value and yet eliminate the danger to health. One of the leaders in these studies is Harold B. Gotaas at the University of California. Accordingly it is not surprising to find that this volume prepared for the World Health Organization is a compendium of knowledge on the subject of composting. The World Health Organization, of course, is interested in the subject because manures are still the staple fertilizer in so many countries.

Professor Gotaas begins his volume with a discussion of the principles involved in the decomposition of organic matter. This is followed with a discussion of the sanitary and agricultural importance of animal wastes. A short historical accounting introduces the discussion of composting itself. After discussing the raw material of organic wastes that are composted, the fundamentals that are utilized in a satisfactory compost operation are discussed and illustrated. This particular discussion accounts for more than a quarter of the volume. Following the consideration of the fundamentals, specific proposals are outlined. The first, a composting program for cities, then a plan for villages and small towns, after which a consideration of methods for individual farms is discussed. The volume is terminated with a discussion of the use of manure and night soil digesters for the recovery of methane gas, while still retaining the valuable decomposed organic matter to be used as fertilizer.

The volume is illustrated with many useful sketches and diagrams. There are almost 100 references and a good index. The paper and type make for ready reading. Although the discussion is of a technical subject, it is carried on in such a way that the average professional public health person will be able to understand it. The volume should be of particular value to persons confronted with the problem of disposing of potential fly breeding and pathogenic disease organism disseminating materials, while at the same time attempting to assist the rural economy through the development of methods for the enrichment of farm lands. The discussions of composting for cities will probably be of interest and value to anyone with any responsibilities for that activity. This is probably the most comprehensive discussion of composting that has been written.

FRANCIS B. ELDER

Sex Attitudes in the Home—By Ralph G. Eckert. New York: Association Press (291 Broadway), 1956. 242 pp. Price, $3.50.

The intrinsic value of this book is its frankness and clarity in presenting the vicissitudes of the sex life of parents and their "bewildering offspring" with practical suggestions how to meet the "facts of life." The material is set forth in a modified Socratic method with the questions employed taken from everyday experiences in the home and community.

The well arranged table of contents takes the place of a formal index and the appendix of five pages gives a carefully selected number of sex education books and pamphlets. The author states frankly at the very beginning that the volume "is not a blueprint to be followed exactly. The incidents here described are not meant to indicate the way to handle such situations, but merely one way. No two persons can or should react in exactly the same manner. . . . No attempt is made here to cover every facet of sex relatedness,

for sex permeates almost every phase of life." It must be stated, however, that this book does cover a wide range of sex relationships which would shock our ancestors to see in print!

The chapter on "Love-Sex Feelings in the Early Years" is especially interesting in attempting to cover the gamut of "What is love"? "Obviously the word (Love) has a somewhat different meaning in each case. But one thing is common to all; something makes someone feel good inside. . . . We feel good when our basic needs for love, for security, for a sense of personal worth and achievment are satisfied; and we love the people that satisfy these needs."

The last chapter on "Love and Sex in Marriage" was written especially for young married couples and parents. It is presented in a practical manner, taking into account the physical, mental, and moral aspects of a satisfactory, happy married life that "enables us throughout our life to meet new situations with courage, love and understanding." The publishers are to be commended for the appropriate format of this well written book.

RICHARD ARTHUR BOLT

Health Yearbook 1955—By Oliver E. Byrd. Standford, Calif.: Stanford University Press, 1956. 339 pp. Price, $4:50.

This latest in the series of Yearbooks compiled by Dr. Byrd, as with the others, gives the nonmedical reader a bird's eye view of what has been reported as progress in medical journals. The subjects chosen are those most likely to appear as news in newspapers and magazine. Dr. Byrd's digest of technical material is easily read and not beyond the comprehension of the person who is without a medical background. The Yearbook is the thirteenth in the series that began in 1943. School libraries will find the book useful as reference for teachers and others who will not have access to professional journals.

MARY P. CONNOLLY

Counseling in Medical Genetics—By Sheldon C. Reed. Philadelphia, Pa.: Saunders (West Washington Square), 1955. 268 pp. Price, $4.00.

This is a small book, running 229 pages, exclusive of the appendixes and index. It does not claim to be a compressive reference book on genetics but aspires to be a handy office aid to the practicing physician in his giving counsel to parents about their questions on medical genetics. Although it does a good job of giving best available information on prevalence, the book will be of limited use to the average practicing physician for a number of reasons. In short paragraphs, the text tries to abstract a great deal of complex research literature. Despite the admitted oversimplification, the variety of studies and findings reported is confusing to the physician-reader who in this field of work is usually a layman. Unfortunately, the author does not highlight the important points at the end of each chapter in a way to help the doctor know where he stands. In the absence of chapter summaries, the text jumps directly from review of the literature, confusing as it is, to samples of counseling experiences at the Dight Institute for Human Genetics, University of Minnesota, of which the author is the director. A good many of these vignettes of counseling seem to be derived from correspondence rather than personal interview. One could have good reason to object strenuously to the use of letters for interpreting such important questions to inquiring parents.

The author is prone to surprisingly strong bias on such matters as donor insemination, the desirability of institutionalization of mentally retarded chil-

dren and the question of adoption of children of different races. He makes no reference to the possible difficulties associated with donor insemination or to recent court decisions in various countries on this matter. Again, one could question the degree of emphasis given to the supposed genetic aspects of certain conditions. For example, in tuberculosis, even if the validity of the genetic elements were fully granted, these would add up to little importance compared with demonstrated preventive procedures. Throughout the book the author quotes studies on twinning and places great significance on the prevalence of certain conditions among identical as contrasted with fraternal twins. He does not caution the reader on the validity of these conclusions in the light of the possibility that the differential between the two types of twinning might be affected by sex of the offspring, common vascularization or different position incidental to single or multiple placentas.

In summary, despite the many negatives, a practicing physician may find the book a short-cut to searching the literature when he is faced with a specific genetic inquiry. If he takes the material with many grains of salt, the book may help him to do a more complete and effective job of interpretation to a worried couple. If so, he may not find it necessary to dodge issues and evade questions or rely on unwarranted, wishful thinking such as, to quote the author "lightning never strikes twice."

SAMUEL M. WISHIK

Books Received

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

BODY MEASUREMENTS AND HUMAN NUTRITION. Edited by Josef Brozek. Detroit, Mich.: Wayne University Press, 1956. 167 pp. Price, $3.50.

CALCIUM AND PHOSPHORUS METABOLISM IN MAN AND ANIMALS WITH SPECIAL REFERENCE TO PREGNANCY AND LACTATION. Franklin C. McLean, et al. New York: Annuals of the New York Academy of Sciences, Vol. 64, Art. 3, 1956, pp. 279–462.

CARE OF THE LONG-TERM PATIENT. CHRONIC ILLNESS IN THE UNITED STATES (Vol. II). Commission on Chronic Illness. Commonwealth Fund Publication. Cambridge, Mass.: Harvard University Press, 1956. 606 pp. Price, $8.50.

CARIES CONTROL PROCEDURES (rev.). Compiled by Robert E. DeRevere. Philadelphia, Pa.: University of Pennsylvania School of Dentistry, 1956. 37 pp.

CONFERENCE ON EPIDEMIOLOGY AND ATHEROSCLEROSIS AND HYPERTENSION 1956. Arden House, Harriman, N. Y., January 29–February 2, 1956. American Heart Association and the National Heart Institute. New York: American Heart Association, 1956. 88 pp. Limited distribution.

DIAGNOSTIC PROCEDURES FOR VIRUS AND RICKETTSIAL DISEASES (2nd ed.). Thomas Francis, Jr., Chairman of the Committee on Diagnostic Procedures for Virus and Rickettsial Diseases, APHA. New York: American Public Health Association, 1956. 578 pp. Price, $7.50.

DICTIONARY OF POISONS. Ibert and Eleanor Mellan. New York: Philosophical Library, 1956. 150 pp. Price, $4.75.

DIRECTORY OF EXCEPTIONAL CHILDREN. Edited by E. Nelson Hayes. Boston, Mass.: Porter Sargent, 1956. 247 pp. Price, $4.00 cloth, $3.00, paper.

DISEASES OF THE BREAST. C. D. Haagensen. Philadelphia, Pa.: Saunders, 1956. 751 pp. 404 figures. Price, $16.00.

DUTTON SERIES ON SEX EDUCATION, THE:

PARENT'S PRIVILEGE. 64 pp. Price, $2.00.

A STORY ABOUT YOU. 63 pp. Price, $2.00.

WHAT'S HAPPENING TO ME? 64 pp. Price, $2.00.

LEARNING ABOUT LOVE. 64 pp. Price, $2.00.

SEX FACTS AND ATTITUDES. 88 pp. Price, $2.50.

Marion O. Lerrigo and Helen Southard in

consultation with Milton J. E. Senn. New York: Dutton, 1956.

DYNAMIC PSYCHIATRY IN SIMPLE TERMS. Robert R. Mezer. New York: Springer, 1956. 174 pp. Price, $2.50.

ENCYCLOPEDIA OF MORALS. Edited by Vergilius Ferm. New York: Philosophical Library, 1956. 682 pp. Price, $10.00.

ENVIRONMENT AND THE DEAF CHILD. Steven Getz. Springfield, Ill.: Thomas, 1956. 173 pp. Price, $3.75.

EPIDEMIC AND ENDEMIC DIARRHEAL DISEASES OF THE INFANT. James A. Baker, et al. New York: Annals of the New York Academy of Sciences, Vol. 66, Art. 1, 1956, pp. 3–230.

GROUP PROCESSES. TRANSACTIONS OF THE SECOND CONFERENCE, OCTOBER 9–12, 1955. Bertram Schaffner. New York: Josiah Macy, Jr. Foundation, 1956. 255 pp. Price, $3.50.

GUIDES TO ACTION TODAY, TOMORROW, TOGETHER ON CHRONIC ILLNESS. NATIONAL HEALTH FORUM, NATIONAL HEALTH COUNCIL, MARCH 21–22, 1956. New York: National Health Council, 1956. 88 pp. Price, $1.00.

HOW TO OVERCOME COLITIS. Joseph F. Montague. New York: Citadel Press, 1956. 288 pp. Price, $4.00.

HUSBANDS AND PREGNANCY. THE HANDBOOK FOR EXPECTANT FATHERS. William H. Genne. New York: Association Press, 1956. 127 pp. Price, $2.00.

KENNY VISITS THE HOSPITAL. Julia Ann Bartosh. New York: Exposition Press, 1956. 62 pp. Price, $2.50.

LABORATORY GUIDE IN VIROLOGY. Charles H. Cunningham. Minneapolis, Minn.: Burgess, 1956. 145 pp. Price, $3.00.

MANPOWER AND EDUCATION. A STATEMENT BY THE EDUCATIONAL POLICIES COMMISSION. Washington, D. C.: National Education Association, 1956. 128 pp. Price, $1.25 paper, $1.75 cloth.

MANUAL OF NURSING AND SPECIAL PROCEDURES. SECTION I—NURSING CARE PROCEDURES, 53 pp. SECTION II—NUTRITION SECTION, 68 pp. Baltimore, Md.: Maryland State Department of Health, Division of Public Health, 1955.

MANUAL OF THE COMMON CONTAGIOUS DISEASES. Philip Moen Stimson and Horace Louis Hodes (5th ed.). Philadelphia, Pa.: Lea and Febiger, 1956. 624 pp. Price, $8.50.

MEDICAL ASPECTS OF TRAFFIC ACCIDENTS, PROCEEDINGS OF THE MONTREAL CONFERENCE ON THE. Traffic Accident Foundation for Medical Research. Montreal, Canada: The Foundation, 1955. 519 pp. Price, $7.25.

NATURE OF BRUCELLOSIS, THE. Wesley W. Spink. Minneapolis, Minn.: University of Minnesota Press, 1956. 464 pp. Price, $8.00.

NERVE IMPULSE. TRANSACTIONS OF THE FIFTH CONFERENCE SEPTEMBER 20–22, 1954. New York: Josiah Macy, Jr. Foundation, 1956. 256 pp. Price, $4.50.

ORGANIZATION OF THE FEDERAL GOVERNMENT FOR SCIENTIFIC ACTIVITIES. National Science Foundation. Washington, D. C.: Gov. Ptg. Office, 1956. 349 pp. Price, $1.75.

OTHER PEOPLE'S CHILDREN. Anna Judge Veters Levy. New York: Ronald Press, 1956. 287 pp. Price, $3.75.

PARASITES AND PARASITISM. Thomas W. M. Cameron. New York: Wiley, 1956. 322 pp. Price, $6.75.

PSYCHOTHERAPY AND CULTURE CONFLICT. Georgene Seward and Judd Marmor. New York: Ronald Press, 1956. 299 pp. Price, $6.00.

PUBLIC HEALTH IN THE CITIES AND TOWNS OF ANSONIA, DERBY, OXFORD, SEYMOUR AND SHELTON, CONN. 1955. Report of a Public Health Survey by the Department of Public Health, Yale Uinversity. New Haven, Conn.: Yale University, 1956. 36 pp.

RESEARCH RELATING TO CHILDREN. Bulletin No. 3. Clearinghouse for Research in Child Life. Washington, D. C.: Children's Bureau, 1956. 124 pp. Price, $.60.

RESOURCES FOR SPECIAL EDUCATION. Edited by Merle E. Frampton and Elena D. Gall. Boston, Mass.: Porter Sargent, 1956. 256 pp. Price, $3.30 cloth; $2.20, paper.

ROSENAU'S PREVENTIVE MEDICINE AND HYGIENE. Kenneth F. Maxcy (8th ed.). New York: Appleton-Century-Crofts, 1956. 1477 pp. Price, $15.00.

SOCIO-ECONOMIC CONDITIONS AND TUBERCULOSIS PREVALENCE IN NEW YORK CITY. Anthony M. Lowell. New York: Tuberculosis and Health Association, 1956. Distribution Limited.

SOME PROTOZOAN DISEASES OF MAN AND ANIMALS: ANAPLASMOSIS, BABESIOSIS, AND TOXOPLASMOSIS. Clarence R. Cole, et al. New York: Annals of the New York Academy of Sciences, Vol. 64 Art. 2, 1956, pp. 25–277.

SYMPOSIUM ON THE ROLE OF SOME OF THE NEWER VITAMINS IN HUMAN METABOLISM AND NUTRITION. R. D. Adams, et al. New York: National Vitamin Foundation, 1956. 137 pp. Price, $2.50.

A Selected Public Health Bibliography with Annotations

P. H. Southern Style—In this Conference Report (Southern Branch APHA) are a number of excellent briefs of discussions delivered there. Many are of much wider interest than for the area to which they were addressed. Justice could not be done the list in this self-elected reader's guide.

ANON. Public Health—Community Wealth. Pub. Health Rep. 71, 8:804 (Aug.), 1956.

Whopping Increase—"Within the single decade following World War II, the child population of the United States increased by more than a third, reaching a record total of 55⅔ million at ages under 18 years in 1955." Provocative discussion follows.

ANON. America's Children. Statist. Bull. Metrop. Life Insur. Co. 37, 8:1 (Aug.), 1956.

On Being Human—Described in useful detail is the training course offered by a Bell Telephone Company to its supervisors. Its prime purpose is to stress learning to deal with people as individuals and to help supervisors to develop leadership in their relations with those they supervise. Are there any such people in your organization who might be helped by this sort of enlightenment?

BEATTY, M. M. Training for Leadership. Nursing Outlook 4, 9:504 (Sept.), 1956.

Educating Mothers-to-Be—Here is in essence, how this commentator concludes his discussion: We believe the intelligent preparation of the mother results in shorter and more efficient labors, more successful deliveries, and last but by no means least, a lowered maternal mortality.

BUXTON, C. L. An Evaluation of a Prepared Childbirth Program. New York State J. Med. 56, 17:2658 (Sept. 1), 1956.

TB Revisited—All who are even remotely connected with the continuing public health problem of tuberculosis will have seen—and should have studied—these magnificent proceedings of a symposium on tuberculosis in infancy and childhood. The brash assumption is voiced here that a lot of other people, who may not be professionally concerned with the disease, will find most of the 300-odd pages of great interest.

DUBOS, R. J., et al. Childhood Tuberculosis. Am. Rev. Tuberc. 74, 2 (Part II): 1 (Aug.), 1956.

Cancer Screening—In a Tennessee County in which about 165,000 women over 20 live, 108,000 accepted an invitation to submit to a test involving vaginal aspiration. All but 40 of the 393 intraepithelial carcinomas detected by the screening had not been suspected and about a third of the 373 invasive uterine cancers picked up also had not been suspected.

ERICKSON, C. C., et al. Population Screening for Uterine Cancer by Vaginal Cytology. J.A.M.A. 162, 3:167 (Sept. 15), 1956.

"As Others See Us"—In our "immense concern for the welfare of the American Student" we health people may sometimes be not above criticism

and our student health services may "smack of benevolent despotism." So concludes a kindly but quite objective observer from across the water.

GRANT, G. Student Health—An Anglo-American Viewpoint. Pub. Health 69, 11:285 (Aug.), 1956.

Memo to: Mr. Administrator—Talking things over with employees who are leaving may help the boss to discover weak spots in his organizational set up. Frank discussions, say the authors, also may help to restore and retain a certain amount of good will.

HENEMAN, H. G., AND KERN, M. S. Exit Interviews. Nursing Outlook 4, 8:436 (Aug.), 1956.

Accident Follow-up—Public Health nurses in Cambridge (Mass.) visit homes of accident victims to teach prevention of further accidents, gather facts, and report hazards as part of an organized city-wide, home safety program.

HOLTHAUS, L. S. Cooperation to Prevent Home Accidents. Am. J. Nursing 56, 9:1160 (Sept.), 1956.

That "Rockefeller Diet"—Fortunately, concludes the writer of this expose, very few people will adhere very long to these two overpopularized, low-protein diets so no great harm is likely to be done other than to deplete labile protein stores, but really compulsive dieters—and there are such—could seriously injure themselves. The popular magazines that promote these diets are doing a disservice to science and their readers.

JOLLIFFE, N. Low-Protein Diets for Reducing. J.A.M.A. 161, 17:1633 (Aug. 25), 1956.

Thought for the Day—Psychodynamic appraisals offer guides for identifying suitable personality traits in candidates who may later be employed in nursing alcoholics or nutritional deviants (nice term, that last!).

LOLLI, G. Nurses for Alcoholics. Pub. Health Rep. 71, 8:727 (Aug.), 1956.

Data Diggers—Three useful papers are hereby commended to you. They deal with the pitfalls in the path of the unwary researcher bent upon undertaking surveys or field studies in which lay interviewers will do the leg work.

MAINLAND, D. The Risk of Biased Selection in Forward-Going Surveys with Nonprofessional Interviewers; COBB, S., AND ROSENBAUM, J. A Comparison of Specific Symptom Data Obtained by Nonmedical Interviewers and Physicians; RUBIN, T., et al. The Use of Interview Data for the Detection of Associations in Field Studies. J. Chronic Dis. 4, 3:240 (Sept.), 1956.

Mounting Research—You will find this wide-ranging review of current cancer studies both impressive and heartening. Even the variety of the activities suggested in the titles of the 159 references selected by the author will prove stimulating. This should be true however far removed your work-a-day professional activities may be. "There is no one cancer problem. There are many problems. . . ." We are forcefully reminded.

MIDER, G. B. Some Developments in Cancer Research. J. Chronic Dis. 4, 3:296 (Sept.), 1956.

No Provoking Effect Here—An emergency poliomyelitis vaccination program was undertaken in the face of a threatening epidemic. Though the lower infection rates among the vaccinees were not of statistical significance, the fact that there was no evidence of any provoking effect due to the vaccinations is to be noted and recorded.

POOS, R. S., AND NATHANSON, N. Use of Poliomyelitis Vaccine Under Epidemic Conditions. J.A.M.A. 162, 2:85 (Sept. 8), 1956.

Teaching via Television—Thirteen half-hour television shows, called, "At Home with Your Child," were produced by the Pittsburgh Department of Health. You will want to know about the audience response. Kinescopes are ready for showing to succeeding parent groups there as well as to other collections of parents.

WAGNER, A. B., AND PATNO, M. E. The Use of a Series of TV Programs to Educate Parents in Child Care. Pub. Health Rep. 71, 8:780 (Aug.), 1956.

Encouragement Here—If for no other reason than the prominence of the author you will probably seek out this brief but revealing summary of the present-day heart disease picture. He says, ". . . the great majority of cardiac patients not only can but should work. Physical exercise and mental activity are two of the best therapeutic measures. . . ."

WHITE, P. D. Heart Disease at Mid-Century. Pub. Health Rep. 71, 8:742 (Aug.), 1956.

If additional information is desired regarding the articles listed in this Bibliography, please communicate directly with the publication in which they appeared; the addresses are furnished for your convenience.

Am. J. Nursing (American Journal of Nursing), 2 Park Ave., New York 16, N. Y.
Am. Rev. Tuberc. (American Review of Tuberculosis), National Tuberculosis Association, 1790 Broadway, New York 19, N. Y.
J.A.M.A. (Journal of the American Medical Association), 535 N. Dearborn St., Chicago 10, Ill.
J. Chronic Dis. (Journal of Chronic Diseases), C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo.
New York State J. Med. (New York State Journal of Medicine), 292 Madison Ave., New York 17, N. Y.
Nursing Outlook, American Journal of Nursing Company, 2 Park Ave., New York 16, N. Y.
Pub. Health (Public Health), Society of Medical Officers of Health, Tavistock House, Tavistock Sq., London, W.C.1, England.
Public Health Rep. (Public Health Reports), Gov. Ptg. Office, Washington, D. C.
Statist. Bull. Metrop. Life Insur. Co. (Statistical Bulletin Metropolitan Life Insurance Company), One Madison Avenue, New York 10, N. Y.

Taft Engineering Center Training

Training programs available at the Taft Engineering Center for the year ending June 30, 1957, are described in a bulletin on Training Programs. There are courses in air pollution, civil defense, milk and food, radiological health, and water supply and water pollution, varying in length from two days to two weeks.

There is no tuition for the courses, but early application is urged, especially since many of the courses involve field arrangements. The bulletin, which includes application forms, and further information from Chief of Training, Robert A. Taft Engineering Center, 4676 Columbia Parkway, Cincinnati 26, Ohio.

News of Affiliated Societies and Branches

Pioneering by New York City Group

Perhaps as a means of meeting the time and travel problems of a great metropolitan area, the New York City Public Health Association, with some 600 members, is experimenting with discussion group meetings. All members of the affiliate are invited to join one of the discussion groups, each of which will be centering on the theme—"Neighborhood Health Problems—Their Present Status, Future, Trends, and Suggested Solutions." The groups, planned for each of the five boroughs, will meet five or six times during the year. Summaries of their discussions will be presented at the annual meeting of the Association in the spring of 1957.

It is hoped that each group will be heterogeneous so that members of the separate specialties may learn from one another and develop a broad point of view on neighborhood health problems. Through a mailing early in November members are being asked to indicate preferred time and place of meeting. A special committee under the chairmanship of William C. Spring, Jr., M.D., professor of public health practice, Columbia University School of Public Health, will coordinate the planning of these meetings.

Also planned by the New York City group is a post-APHA Annual Meeting review and discussion. George James, M.D., a deputy commissioner, New York City Department of Health, will review the "How Are We Doing in Public Health?" debate with special reference to New York City problems. A panel will discuss the issues raised, the questions unanswered, and ideas for "how-to-do" methods. Reginald M. Atwater, M.D., will survey the 84th APHA Annual Meeting from his perspective as executive secretary of the national group.

This latter meeting will take place on December 5 in the auditorium of the new Donnell Library Center, 20 West 53rd Street, New York City; 3:30 P.M.

Dakota Discusses Missouri Basin

The South Dakota Public Health Association for the second year met jointly with the State Social Welfare Conference, September 12–14. The discussions in Custer centered around the Missouri River Basin development and its impact on the health and culture of the region. Professor Otto G. Hoiberg, coordinator of community services, University of Nebraska, was the banquet speaker and summarized two general sessions. In these panels medical and dental care, welfare, recreational, agricultural, and religious aspects of the development were explored as well as employment security, natural resources, civil defense, industrialization, and the construction impact. Professor Hoiberg made a plea for regional and original thinking. "What we need is regional thinking to go with this regional physical program."

There were workshops respectively on the health and welfare aspects of the basin development with particular emphasis on housing, occupational health, and Indian adjustment to the development.

The last afternoon was devoted to business meetings of the two associations and to a tour of Crazy Horse Monument and Custer Sanitarium conducted by the Custer Chamber of Commerce. Earlier the Motel Association had furnished cars for a tour of the Black Hills.

Among the resolutions adopted was

one continuing the joint annual meetings and including in future the State Rehabilitation Association. Other resolutions were for a joint legislative representative for the two associations at Pierre, as well as joint committees for study and action on common problems. A committee has been set up to explore districting plans for the public health association.

Floyd Schenk, of the Schenk Funeral Home, Yankton, succeeded Harlan Stricklett, administrator of the Pennington County Health Department, Rapid City, as president. Other officers elected are:

President-Elect: Leland E. Aase, director, Division of Public Health Statistics, State Department of Health

Vice-President—Matilda Bloem, R.N., consultant nurse, State Health Department

Secretary-Treasurer: Louis E. Remily, administrative officer, Public Health Education Section, State Department of Health.

NOTE: A full report of the meeting by the outgoing secretary-treasurer, Florence Dunn, the administrator of the Mental Health Section, State Department of Health, reached the Journal within ten days after the close of the meeting. And included was a list of the names, addresses, and titles of the 296 members. This is probably a record and deserves special mention—The Editors.

Pennsylvania Health Conference

The Fifth Annual Health Conference, sponsored jointly by the Pennsylvania Public Health Association, the State Department of Health, the Pennsylvania Health Council, and the State Medical Society was held in University Park on the State University campus, August 20–23. The 1,000 delegates were treated to a balanced program of scientific sessions, social engagements, and scientific and technical exhibits. Screening diagnostic tests were available at various times throughout the conference.

General sessions were held on the themes, "Contributions to Community Health" and "To-day and Tomorrow in Public Health." At the latter the presidents of the sponsoring organizations and the secretary of health, Berwyn F. Mattison, M.D., spoke. Ira V. Hiscock, APHA president, participated in the latter session. Governor George M. Leader led off on a third general session followed by L. T. Coggeshall, M.D., special assistant to the secretary for health and medical affairs, U. S. Department of Health, Education and Welfare, and Howard Ennes, director of health education, Equitable Life Assurance Society.

In addition, the State Health Department held staff meetings for one entire day. Other technical sessions of specialized groups were held in laboratory procedures, sanitation, tuberculosis, veterinary public health, health education, chronic diseases, business and personnel management, the environment and chronic illness, community health studies, and handicapped children with cleft palates.

At the business meeting of the State Public Health Association its Award of Merit was presented to J. Alexander Hope, M.D., retiring director of the Pittsburgh Health Department, for his long years of contributions to public health.

The By-laws of PPHA were amended to permit formation of the first two specialty sections, Environmental Health and Health Education. D. S. Abell, chief, Environmental Health Division, Butler County Health Department, was elected chairman of the former, and Otto Kuscher, director of health education, Pennsylvania Tuberculosis and Health Society, of the latter. Resolutions commending the governor and others for appropriating funds for a greatly expanded mental health program by the 1955 Assembly, and a re-endorsement of fluoride additions to public water supplies as a safe and effective method for reducing the prevalence of dental caries were adopted.

Henry R. O'Brian, M.D., director of professional training, Pennsylvania Department of Health, Harrisburg, was chairman of the Program Committee.

The following officers were elected:

President: Milton Nicholson, D.D.S., University of Pittsburgh School of Public Health

President-Elect: Mary E. Beam, R.N., instructor, Public Health Nursing, School of Nursing, University of Pennsylvania, Philadelphia

Vice-President—Robert Coker, M.D., director of health, Butler County

Secretary-Treasurer: Robert H. Conn, health education consultant, Pennsylvania Health Department.

APHA AFFILIATED SOCIETIES AND BRANCHES

Society and Secretary

ARIZONA PUBLIC HEALTH ASSOCIATION, Evelyn Longstreth, 225 W. Washington, Phoenix

CALIFORNIA, NORTHERN, PUBLIC HEALTH ASSOCIATION, Constance Cavender, Alameda Co. Health Dept., 15000 Foothill Blvd., San Leandro

CALIFORNIA, SOUTHERN, PUBLIC HEALTH ASSOCIATION, Gerald A. Heidbreder, M.D., 241 No. Figueroa St., Los Angeles

COLORADO PUBLIC HEALTH ASSOCIATION, Margaret D. Lewis, 659 Cherokee St., Denver

CONNECTICUT PUBLIC HEALTH ASSOCIATION, Mrs. Claire Reinhardt, 310 Cedar St., New Haven

CUBAN PUBLIC HEALTH SOCIETY, Dr. Raphael Calvo Fonseca, San Rafael 1170, Havana

FLORIDA PUBLIC HEALTH ASSOCIATION, Nathan J. Schneider, Ph.D., P. O. Box 210, Jacksonville

GEORGIA PUBLIC HEALTH ASSOCIATION, J. F. Hackney, M.D., 224 Central Ave., S.W., Atlanta

IDAHO PUBLIC HEALTH ASSOCIATION, Mrs. D. W. McDougal, P. O. Box 563, Boise

ILLINOIS PUBLIC HEALTH ASSOCIATION, William B. Hixon, Evanston Health Dept., Evanston

IOWA PUBLIC HEALTH ASSOCIATION, Mary L. Wombacher, State Dept. of Health, Des Moines

KANSAS PUBLIC HEALTH ASSOCIATION, Evelyn Ford, State Board of Health, State Capitol, Topeka

LOUISIANA PUBLIC HEALTH ASSOCIATION, Mrs. Velma Brusse, Dept. of Health, New Orleans

MASSACHUSETTS PUBLIC HEALTH ASSOCIATION, Muriel Bliss Wilbur, 695 Huntington Ave., Boston

MICHIGAN PUBLIC HEALTH ASSOCIATION, Maurice J. Mayer, 405 Hollister Bldg., Lansing

MINNESOTA PUBLIC HEALTH CONFERENCE, D. S. Fleming, M.D., State Dept. of Health, University Campus, Minneapolis

MISSISSIPPI PUBLIC HEALTH ASSOCIATION, Mrs. Cassie S. Feagin, P. O. Box 1700, Jackson

MISSOURI PUBLIC HEALTH ASSOCIATION, Mrs. Nadia Craver, 5th Fl., State Office Bldg., Jefferson City

MONTANA PUBLIC HEALTH ASSOCIATION, Mrs. Harriet Patterson, Thompson Falls

NEW MEXICO PUBLIC HEALTH ASSOCIATION, Robert Howell, 305 Terrace Ave., N. E., Albuquerque

NEW YORK CITY, PUBLIC HEALTH ASSOCIATION OF, Joseph Kadish, 164 W. 174th St.

NEW YORK STATE PUBLIC HEALTH ASSOCIATION, Mary C. Egan, New York State Department of Health, Albany, N. Y.

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION, Mrs. Betty E. Briggs, State Board of Health, Raleigh

NORTH DAKOTA PUBLIC HEALTH ASSOCIATION, Mrs. Cora Shelstad, Court House, Finley

OHIO PUBLIC HEALTH ASSOCIATION, Virginia Jones, Ohio Dept. of Health, Dayton

OKLAHOMA PUBLIC HEALTH ASSOCIATION, Marjorie Butler, 3400 North Eastern, Oklahoma City

PENNSYLVANIA PUBLIC HEALTH ASSOCIATION, Robert H. Conn, 303 N. Second St., Harrisburg

PUERTO RICO PUBLIC HEALTH ASSOCIATION, Conchita Carrasquillo, Apartado 211, San Juan

SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION, Mrs. Carrie B. Du Priest, State Board of Health, Columbia

SOUTH DAKOTA PUBLIC HEALTH ASSOCIATION, Louis E. Remily, State Dept. of Health, Pierre

TENNESSEE PUBLIC HEALTH ASSOCIATION, C. B. Tucker, M.D., State Dept. of Health, 420 Sixth Ave., N., Nashville

TEXAS PUBLIC HEALTH ASSOCIATION, H. E. Drumwright, City Health Dept., Dallas

UTAH PUBLIC HEALTH ASSOCIATION, Mrs. Mildred Engar, Salt Lake City Board of Health, 115 So. State, Salt Lake City

WASHINGTON STATE PUBLIC HEALTH ASSOCIATION, Muriel Thompson, State Dept. of Health, Smith Tower, Seattle

WEST VIRGINIA PUBLIC HEALTH ASSOCIATION, Harry M. Huff, State Dept. of Health, Charleston

WISCONSIN ASSOCIATION FOR PUBLIC HEALTH, Paul Weis, 1 W. Wilson St., Madison

SOUTHERN BRANCH, A.P.H.A., Joseph M. Bistowish, M.D., P. O. Box 1117, Tallahassee, Fla.

WESTERN BRANCH, A.P.H.A., Mrs. L. Amy Darter, State Dept. of Health, 2151 Berkeley Way, Berkeley, Calif.

APHA membership application blank appears on page XXXI

Employment Service

The following pages present information for those seeking public health personnel and for those seeking positions in public health. Other information concerning vacancies and personnel available is on file in the Association office. Anyone wishing to have the benefit of this additional information can obtain it by writing to the Vocational Counseling and Placement Service of the Association.

Advertising space in these pages is available at special rates for the use of employers or individuals. The charges are $5 for the first 50 words or fraction thereof and $1 for each additional 10 words or fraction thereof. There is no charge to members or Fellows of the Association who desire to utilize the **Positions Wanted** portion of these pages. **Closing date** for receipt of advertisements is the first of the month preceding the desired month of publication.

POSITIONS AVAILABLE

Director of Health—for the city of Waterbury, Conn. Must have degree and experience in public health administration and be eligible for Connecticut licensure. Write to Christopher E. Dwyer, M.D., President, Board of Health, Waterbury, Conn.

Public Health Physician—for director of city-county health department in a progressive community of 65,000 population with high medical and hospital standards, and having a full-time health department for 35 years and offering an excellent opportunity for continued program development. Health department staff includes public health nurses, dentist, sanitarians, health educator. Excellent personnel policies. Good retirement plan. Entrance salary depends on qualifications. Area provides fine family environment with excellent school, cultural, and recreational facilities. Inquire, President, Adams County Board of Health, Quincy, Ill.

Full-Time Health Officer—for two-county district health department on the Upper Peninsula in Michigan. Well established health department with full staff. Doctor with public health training preferred. Salary according to qualifications and experience. Write Albert Kipfer, Acting Director, Delta-Menominee District Health Dept., Escanaba, Mich.

District Health Officer — Snohomish County, Everett, Wash. Excellent opportunity available in well established, full-time health department 23 miles north of Seattle on Puget Sound. Annual salary $10,836–$12,384. M.P.H., three years of experience, and eligibility to practice in Washington necessary. Write: Bernard Bucove, M.D., State Director of Health, Smith Tower, Seattle, Wash.

Public Health Nurse—$370, $391, $413, $436; starting salary dependent upon qualifications. Generalized program; county car or eight cents per mile; 37½-hour week. For further information write to: Garold L. Faber, M.D., M.P.H., Director, Butte County Health Dept., P. O. Box 1100, Chico, Calif.

Qualified Public Health Nurse—Must be eligible for California certificate. Salary $376–$458; travel allowance for use of private car. Write to San Benito County Health Dept., Health Center Bldg., Hollister, Calif.

Public Health Nurse—Northern California. Salary $341–$410. Eligible for California P.H.N. certificate. Generalized program; immediate employment; liberal vacations, holidays, retirement. Growing community 55 miles from San Francisco. Excellent recreational facilities. Sonoma County Personnel Dept., Court House, Santa Rosa, Calif.

Public Health Nurse Consultant—to give direct supervision to local public health nursing services in one area in the state and assist with staff development program. New lease car for personal use; Social Security plus state retirement plan; Blue Cross-Blue Shield; merit system. Beginning salary dependent on qualifications. Five per cent annual increase for five years. Write: Miss Marian Chladek, Director, Division of Public Health Nursing, Wyoming Dept. of Public Health, State Office Bldg., Cheyenne, Wyo.

Public Health Nurse Consultant (Maternal and Child Health)—to provide technical program guidance and staff education in maternal and child health area of a generalized public health nursing program. Salary $5,400 to start, with four annual increases to $6,480. Permanent career service; liberal benefits. Qualifications: four years of public health nursing experience, including one year in a teaching, consulting, supervisory, or administrative capacity, and one year in the field of maternal and child health. Master's degree in public health nursing or public health nursing education with major course work in maternal and child health. Miss

Madelyn Hall, Director of Public Health Nursing, Philadelphia Dept. of Public Health, Room 615 City Hall Annex, Philadelphia, Pa.

Public Health Nursing—Positions available in health department with the city of Flint, a rapidly growing city of 180,000 population. Beginning, intermediate, and administrative positions are available. Five-day, 40-hour week, with liberal retirement, vacation, and sick leave policies. Car furnished. Beginning salary rates: $3,952, $4,329, or $4,654, depending on experience and qualifications. Automatic increases and longevity rates for length of service. Apply Flint Civil Service Commission, City Hall, Flint, Mich.

Health Officer—for district composed of three small counties on the Suwannee River in Florida. American citizen or first papers, graduate AMA approved school. Training and experience required. Salary open. Write Wilson T. Sowder, M.D., M.P.H., State Health Officer, P. O. Box 210, Jacksonville 1, Fla.

Health Officer—for health unit in southern Florida. American citizen or first papers. Graduate of AMA approved school. Training and experience required, MPH desirable. Salary open. Write Wilson T. Sowder, M.D., M.P.H., State Health Officer, P. O. Box 210, Jacksonville 1, Fla.

New York State Department of Mental Hygiene has openings in the following titles: **Principal Mental Health Consultant**—$9,074–$10,000; **Associate Mental Health Consultant**—$6,550–$7,980; **Senior Mental Health Consultant** (correction — $5,390–$6,620; **Mental Health Consultant**—$4,430–$5,500. Civil service examinations will be held on December 15, 1956. Applications will be accepted to November 16. For full information and applications, write the Recruitment Office, State Dept. of Civil Service, Albany, N. Y.

Public Health Nurses—Monthly salary range $380–$420. Forty-hour week, annual increases, liberal vacation, sick leave, and retirement. Apply: Public Health Nursing Director, Wayne County Health Dept., Eloise, Mich.

Public Health Nurse IV (Cardiovascular Disease Consultant Nurse)—with state board of health for expanded program development. Completion of approved public health course and four years' experience, including supervisory, administrative, educational, or advisory capacity. Salary range $5,028–$6,048; travel allowance. Write: Henry A. Kjentvet, Personnel Officer, Wisconsin State Board of Health, Madison 2, Wis.

Social Work Supervisor I (Medical Social Consultant)—with state board of health for expanded cardiovascular and chronic disease program. College graduation; completion of at least two years of graduate training in a recognized school of social work; four years' experience with a governmental agency in the field of medical social work, two years of which shall have been in a supervisory capacity. Substitution of additional specialized training and experience may be made. Salary range $5,028–$5,808; travel allowance. Write: Henry A. Kjentvet, Personnel Officer, Wisconsin State Board of Health, Madison 2, Wis.

Clinical Social Worker—Immediate opening. Member of clinic psychiatric team, dynamically oriented, places special emphasis on developing program; accepted in this Washington community, known for capacity to explore methods and plan constructively for needs. Duties: intensive casework with parents and children; shared responsibility with other clinical social worker for intake; participation in diagnostic, consultative services, and mental health education. Requirements: master's degree, psychiatric sequence desirable, with two or three years' experience, preferably in a child guidance clinic or children's agency; if not, at least one year supervisory and/or consultative experience. Salary $4,975 to $5,749 per annum. Retirement benefits. Psychiatric Youth Services, Montgomery County Health Dept., Rockville, Md. Christine W. Kehne, M.D., Director.

Public Health Engineer—State Health Department, Seattle. Outstanding opportunity to participate in the development of public water supplies and sewage disposal systems in the Evergreen State. Engineering degree plus experience required; graduate work desirable. Annual salary $5,904–$6,732. Write: Emil Jensen, Chief Engineer, State Health Dept., Smith Tower, Seattle, Wash.

Senior Sanitary Engineer—Qualifications: graduate from college in engineering and three years of experience. Salary range $4,440–$6,360. Appointment may be made above minimum depending on qualifications. Sanitary engineering work involves water supply, water pollution control, general sanitation. Apply to Glendon A. Scoboria, State Personnel Director, State Office Bldg., Hartford, Conn.

Engineers—Eligible for registration in Louisiana for Monroe, Lafayette, and New Orleans offices of Louisiana State Department of Health. We have position vacancies for graduate civil, mechanical, chemical, and sanitary engineers with no experience to train as public health engineers. Starting salary $395, with promotion to Public Health Engineer grades. Also, vacancies for **Public Health Engineer I,** starting salary $425 and **Public Health Engineer II,** starting salary $500. Liberal travel, military and annual

leave, and retirement system. You work under an established civil service system. Write to Louisiana State Health Dept., Box 630, New Orleans 7, La., for further information.

Industrial Hygiene Engineer I—$400–$500; college degree, major courses in sanitary, industrial hygiene, chemical, or mechanical engineering; or satisfactory equivalent combination of experience and training. **Industrial Hygiene Engineer II**—$500–$625; degree in one of above types of engineering, plus three years' experience in industrial hygiene. Graduate study in field preferred. Write to Mr. Alfred T. Johnson, Personnel Director, Oregon State Board of Health, P. O. Box 231, Portland 7, Ore.

Sanitarian(s)—Wanted for rapidly expanding industry-operated sanitation inspection program. Applicants must be under 35, must have a college degree, be willing to locate in or near and travel within a 500-mile radius of Chicago. Regulatory experience is desirable, but intelligence and perseverance are the most wanted personal characteristics. Write **Box S-31**, Employment Service, APHA.

Sanitarian—Rural county in Sierra foothills. Salary $325–$395. Applicant must be a registered sanitarian. Car required, eight cents mileage allowance. Ruth M. Moldenhauer, M.D., Director of Public Health, Placer County Health Dept., Auburn, Calif.

Sanitarians—Immediate openings. Beginning salary $375/month, with increases to $459/month in three years. Generous vacation, sick leave, and retirement provisions. County car furnished. Excellent working conditions in the fastest growing county in the San Francisco Bay area. Requirements: eligibility for/or registration as sanitarian in California; bachelor's degree in sanitary or allied science; and Civil Service (APHA) examination. Apply: Charles B. Ruegnitz, Chief, Bureau of Sanitation, Alameda County Health Dept., 15000 Foothill Blvd., San Leandro, Calif.

Sanitarian—for Allegan County, Mich. A rural county of 52,000 population in southwestern Michigan having a generalized program in environmental sanitation. Emphasis on milk, food, and resort sanitation. Five-day week; Social Security; liberal vacation and sick leave. Starting salary $3,800–$4,000, plus travel. Write A. B. Mitchell, M.D., Medical Director, Allegan County Health Dept., Allegan, Mich.

Health Educator—Salary range $380–$480. Appointment may be above minimum. State and local level positions due to program expansion. Excellent state retirement plan and Social Security. Master's degree in public health education and two years' health education experience or master's degree in health education and three years' health education experience. Merit System Supervisor, Sam W. Mitchell Bldg., Helena, Mont.

Public Health Laboratory Bacteriologist—Five-day week; start $333 monthly; county retirement system; California certificate necessary. Write to Dr. Irena A. Heindl, P. O. Box 1607, Modesto, Calif.

Bacteriologist—Salary range $320–$420. State public health laboratory position, with opportunity for advancement. Excellent state retirement plan and Social Security. B.S. degree with 20 semester hours in bacteriology. Merit System Supervisor, Sam W. Mitchell Bldg., Helena, Mont.

Virologist—Salary range $680–$830. To institute and administer state public health virology laboratory. Doctoral degree and experience in this field required. Starting salary dependent on qualifications. Opportunity to perform important creative work in new program. Write G. D. Carlyle Thompson, M.D., State Board of Health, Helena, Mont.

Senior Bacteriologist—State Laboratory, Seattle. Position available for bacteriologist with two years of experience serving in one or several units of the State Health Department Laboratory. Annual salary $4,188–$4,968. Write: Dr. W. R. Giedt, State Health Dept., Smith Tower, Seattle, Wash.

Public Health Nutritionist—Develop and conduct program in district area, including consultation to nurses, teachers, social workers, small hospitals, nursing homes, children's institutions; training programs; community studies and education. Master's degree, internship, two years' hospital and community nutrition experience. $4,992–$5,772 plus travel expense. Vacation, sick leave, Social Security, retirement. Dr. Amy Louise Hunter, State Board of Health, Madison, Wis.

Executive of Bureau on Alcoholism—On the staff of a large metropolitan health and welfare planning agency. Duties consist of coordination, planning, promotion of community services, and public education. Prefer public health or social work degree and experience in areas of community organization, health education, and voluntary health association. Write **Box HE-80,** Employment Service, APHA.

A leading national voluntary health association has openings in various parts of the country in many categories—**Field Workers, Health Educators, Executive Secretaries, Executive Directors.** Master's degree in health or related fields desirable, but not essential. Some experience in public health, community organization, or administration of voluntary health agency required. Positions and salaries commensurate with education,

experience, and placement. Please send resume to **Box C-31,** Employment Service, APHA.

Director, Public Health Laboratories—Qualifications: graduation from an accredited college or university with an earned doctor's degree (Ph.D., Sc.D., M.D.) in the field of laboratory sciences and three years' progressively responsible experience in a public health laboratory or similar agency. Salary range $6,048–$7,664. It is expected that this salary will be increased shortly after the first of the year. Write Dalton Roberts, Chief, Administrative Services, Colorado Dept. of Public Health, 420 State Office Bldg., Denver, Colo.

Medical Health Officer—for an established two-county health department in southern Colorado. Combined population 38,510, headquarters Trinidad, Colo. Salary range $9,600–$11,100. Requires physician with public health training and experience. Dalton Roberts, Chief, Administrative Services, Colorado State Dept. of Public Health, 420 State Office Bldg., Denver 2, Colo.

Sanitarians—for state level positions. College graduation with two years' public health experience for trainee level position; salary $320–$403; or four years' public health experience for consultant level; salary $364–$459. It is expected that a wage survey now in progress will increase these salaries. Dalton Roberts, Chief, Administrative Services, Colorado State Dept. of Public Health, 420 State Office Bldg., Denver 2, Colo.

Public Health Engineer—to work in Colorado state public health engineering program. Trainee level requires graduation from accredited college with one year of related experience; salary $388–$488. Journeyman level requires two years' experience; salary $444–$558. It is expected that a wage survey now in progress will increase these salaries. Dalton Roberts, Chief, Administrative Services, Colorado State Dept. of Public Health, 420 State Office Bldg., Denver 2, Colo.

Physician—to be assistant chief, MCH and CC program with State Health Department. Requires physician with two years' experience in public health or related activities. Salary $8,580–$9,900. Dalton Roberts, Chief, Administrative Services, Colorado State Dept. of Public Health, 420 State Office Bldg., Denver 2, Colo.

Physical Therapist—to develop service with a visiting nurse service and county nursing service in midwestern university city of approximately 100,000 population. Eligible for state registration. At least one year of supervised experience. Nurse therapist preferred but not essential. Salary $4,000–$4,200, plus generous travel allowance and good personnel policies. Apply Miss Ruth E. Te Linde, Director, Visiting Nurse Service, 418 West Mifflin St., Madison, Wis.

International Vacancies

Malariologist, Public Health Administrators, Public Health Engineers, Public Health Nurses, Nurse Educators—There are several positions open in Latin America and the Caribbean for persons in the above categories. The essential qualifications are public health training and extensive field experience. Malariologists need considerable experience in malaria programs and use of the new residual insecticides. Nurses require advanced training in public health nursing or nursing education, as well as extensive experience in supervision, administration and/or teaching. Spanish is desirable in nearly all cases. Salaries and allowances range from $6,000 to $11,000 per annum. For further particulars, write to the Personnel Officer, PASB/WHO, 1501 New Hampshire Ave., Washington 6, D. C.

POSITIONS WANTED

Public Health Educator (Female)—M.S.P.H.; 13 years' experience in official and voluntary public health agencies, with emphasis on community organization; teaching experience. Want position giving consultation and/or direct service in community organization for a public health program under either voluntary or official auspices. Will travel, but prefer to live in Washington, D. C., area. Write **Box HE-79,** Employment Service, APHA.

Bacteriologist — Ph.D., age 35, well rounded background in medical and public health bacteriology. Can offer proved abilities in research, administration, and teaching for a challenging position with medical school, industry, or public agency. Write **Box L-53,** Employment Service, APHA.

Commercial Advertisements

All communications on the following commercial advertisements should be sent to Burneice Larson, Medical Bureau, Suite 605, 900 North Michigan Avenue, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

WANTED—(a) Director of health; rapidly growing progressive community, population 63,000; city manager—council government; $12,000–$14,000; Midwest. (b) Medical director, student health department; 2,800 students; attractive university town, West. (c) Director, state public health laboratory; degree, minimum year in laboratory supervisory capacity; $6,120. (d) Epidemiologist; foreign operations, major industrial company; $14,000 plus home, family maintenance; tax free. (e) Educational director; staff program; VNA; to $5,670 and expenses; retirement plan; Middle West. (f) Chief nurse; operate 10-bed dispensary; Indo China; also staff for Egypt, India, Italy, South America. (g) Assistant or associate professor; newly established collegiate program; university medical center; $5,000–$6,000. (h) Sanitarian; degree in sanitary sciences, public health, or engineering, three years' experience required; foreign operations, major industrial company. (i) Dental health education coordinator; M.S. or Ph.D.; five years' experience health education; $8,000–$10,000; West. (j) Health education consultant; community organization; responsible for 25 counties in state program; Midwest. (k) Executive and assistant directors, educational and campaign directors, field representatives; various sections of United States; national health organization. (l) Health inspector experienced meat and dairy products inspection; foreign.

OPPORTUNITIES WANTED

WANTED—Opportunities for public health physicians, nurses, educators, engineers, public health laboratory personnel. Candidates in all parts of the country, available for administrative, academic, and staff appointments. Negotiations strictly confidential.

"One broad feature which forms a background to the whole fifty years (1901–1951) may be mentioned at this point; everyone says that prevention is better than cure, and hardly anyone acts as if he believes it, whether he is attached to Parliament, central or local government, or the commonalty of citizens. Palliatives nearly always take precedence over prevention, and our health services today are too heavily loaded with salvage. Treatment—the attempt to heal the sick—is more tangible, more exciting, and more immediately rewarding, than prevention."

Professor James M. Mackintosh in the Heath Clark Lectures on Trends and Opinion About the Public Health.

News from the Field

WHO News

PASO Meets in Guatemala

The Directing Council of the Pan American Sanitary Organization met in Antigua and Guatemala cities, Guatemala, jointly with the WHO Regional Committee for the Americas, September 16–29. Among the problems discussed was that of leprosy. It was agreed that PASO should take the initiative in launching a continent-wide program for the eradication of leprosy, such as is in progress for malaria eradication. However, more knowledge is needed of the extent and epidemiology of leprosy, as well as substantial funds for a campaign. Leprosy censuses have been carried out in a number of countries by WHO consultants. In Paraguay where the problem is especially serious a control plan was set up in 1954 following a census. Beginning in September, 1956, a consultant is being provided. Fellowships have been provided for the training of Paraguayan physicians and UNICEF is furnishing equipment, drugs, and other necessary items.

The meeting was stirred by a dramatic announcement by the United States delegate, Henry Van Zile Hyde, M.D., that his government was contributing $1,500,000 to the Pan American Sanitary Organization for expanded assistance in 1957 to the hemisphere malaria eradication campaign. This contribution is in addition to the regular annual quota United States payments.

The minister of public health and welfare for Guatemala, Dr. Carlos Soza Barillas, was elected president of the Directing Council. Fred L. Soper, M.D., director of PASB, reporting on the year's activities, indicated that the Bureau was now well staffed with highly trained personnel. He noted that in spite of a vast growth in requests for its services by various governments the Bureau's budget had increased by an average of only three and a half per cent over the past eight years.

A 1957 budget of $2,400,000 was adopted for the work of the Pan American Sanitary Bureau for the 126 health projects being carried on in collaboration with the health administrations of member governments. In addition, the Bureau, administering the program of WHO's Regional Office, will have a WHO allocation of $1,402,970 as well as approximately one million dollars from United Nations Technical Assistance.

Leading Insect Resistance Research

A small group of experts met in Geneva for a week in July to assay WHO's responsibility for leadership in stimulating and coordinating research on the problem of insect resistance to insecticides. Such leadership, it was agreed, must be assumed by WHO in view of the serious and widespread world's diseases that are insect-borne—malaria, yellow fever, typhus, plague, dysenteries, and others. Already the housefly is universally becoming insecticide-resistant and there is confirmed proof of resistance in 10 different species of disease-carrying insects.

WHO's responsibility was outlined as coordination of the different lines of research going on in laboratories throughout the world; stimulation of further research, particularly in the

physiology, biochemistry, and genetics of the insects; publication and exchange of information and results; helping to get qualified personnel and funds for research; development of standard technics for detecting and measuring resistance; and circulation of information about new insecticides. It was reported that WHO will call an early conference of directors of laboratories engaged in research or resistance problems.

S. W. Simmons, Ph.D., chief of the Technology Branch, Communicable Disease Center, was chairman of the Expert Committee, and L. E. Chadwick, Ph.D., chief of the Entomology Branch, directorate of medical research, Army Medical Center in Maryland, was another member. Other members were from Denmark, Great Britain, Iran, Italy, Malaya, and New Zealand.

Radiation and Human Heredity

A study group organized by WHO, of 20 scientists from nine countries, met in Copenhagen, August 7–11, to study the effects of radiation on human genetics. It was agreed that too little is yet known of the extent and importance of radiation effects in man. Recommendations included intensification of genetic research, particularly human genetics, increasing teaching facilities and training more scientists in genetic research, and reducing the hazards of man-made radiation from sources used in medicine, commerce, and industry. Chairman of the group was Alexander Hollander of the Biology Division, Oak Ridge National Laboratory.

Doing Something About Migrants

The Florida State Board of Health has undertaken a five-year program to improve maternal and child health services for agricultural migrant workers in two counties of the state. The counties, Palm Beach and Collier, each have a large migrant population each autumn, about 20,000 and 6,000, respectively. The two demonstration counties are expected to pave the way for better continuing services to the approximately 75,000 migrants, "often ill fed and poorly housed," who are annually necessary to the state's economy.

Funds under the grant from the Children's Bureau will be used for employing additional public health nurses and for setting up clinics in the area. It is the eventual plan to set up in the health departments of each of the two counties a team composed of a physician, public health nurses, a health educator, medical social worker, and possibly a nutrition consultant.

The program is under the general direction of R. W. McComas, M.D., director of the State Health Department's Bureau of Maternal and Child Health. Locally it will be directed by the respective health officers, C. L. Brumback, M.D., and M. E. Buchwald, M.D. The project follows a two-year study of health problems of migrant workers by Earl L. Koos, professor of sociology, Florida State University.

Minimum Decent Living for New York

The New York State Division of Housing has begun a two-year study in an attempt to find the answer to the question, "What are the minimum conditions for decent living for the people of New York State?" The study is examining the existence, application, and effectiveness of various local health and safety ordinances—or the lack of them—in two widely separated counties and in 35 communities throughout the state, ranging in size from villages of 2,000 population to the larger cities. Local enforcement problems will be sought out in an effort to bridge the gap between existing practices that are generally recognized to be inadequate and

the adoption of improved methods that will assure decent, safe, and sanitary housing.

Because of its expected national significance, the study is being financed in part by the Urban Renewal Administration of the Housing and Home Finance Agency under Section 314 of the National Housing Act of 1954. One of the results of the state study will be the preparation and publication of administrative guides for the use of municipalities for improving housing conditions scientifically and effectively.

An interdepartmental committee made up of experts from the State Health, Labor, Agriculture, Commerce, and Welfare Departments and the State Building Code Commission has been set up to help in the findings of the special study group. Director of the study is John Connolly, who for the past five years has been housing and home accident consultant in the New York Regional Office of the Public Health Service. Administrative consultant is Spencer D. Parratt, professor of political science, Maxwell School of Citizenship and Public Affairs of Syracuse University; technical consultant is George N. Thompson, formerly chief of the Division of Codes and Specifications, National Bureau of Standards.

Course in Tuberculosis Diagnosis

A course in Laboratory Methods in the Diagnosis of Tuberculosis is being offered by the Bacteriology Laboratories of the Communicable Disease Center, in cooperation with the Division of Special Health Services, Public Health Service, January 21–February 1, 1957.

All grades of employed laboratory personnel, including laboratory directors and senior staff, approved by their state health officers are eligible. Practical laboratory training in all phases of tuberculosis bacteriology, including preparation of culture media, microscopy, cultural procedures, diagnostic use of animals, and testing of drug sensitivity will be included in the course.

There are no tuition or laboratory fees. Reservations should be made well in advance. Details and application forms from Laboratory Training Services, Communicable Disease Center, Public Health Service, P. O. Box 185, Chamblee, Ga.

Brookline Combined Nursing Program

Brookline, with a population of 58,000, is reportedly pioneering in Massachusetts with a combined nursing program. The Brookline Friendly Society has combined its nursing service with that of the Brookline Health Department on a contractual basis. The former executive director of the Visiting Nurse Service, Lilly C. Moberg, R.N., is the nurse administrator of the new combined program, named the Brookline Visiting Nurse Service. The Visiting Nurse Service maintains its identity as a voluntary agency under the United Community Services of Greater Boston.

American Hospital Group Meets

At the Chicago annual meeting of the American Hospital Association held from September 17 to 20, Albert W. Snoke, M.D., director of the Grace-New Haven Hospital in New Haven, was installed as president, succeeding Ray E. Brown, superintendent, University of Chicago Clinics. The theme of the meeting was "Planning for the Future."

Citations of accomplishment on the 10th anniversary of the Hill-Burton Hospital Survey and Construction Program were awarded to the authors of this legislation, Senator Lister Hill of Alabama and former Senator Harold H. Burton of Ohio, now associate justice of the United States Supreme Court. Others receiving citations of accomplishment are Surgeon General Leroy E.

Burney; Marion B. Folsom, secretary of health, education, and welfare; and George Bugbee, president, of the Health Information Foundation, and former director of AHA.

Honorary memberships were also awarded to Theodore G. Klump, M.D., president, Winthrop Laboratories; George F. Lull, M.D., general manager of the American Medical Association; and Emory Morris, D.D.S., general director, W. K. Kellogg Foundation. Charles F. Wilinsky, M.D., hospital consultant and past president of AHA received the Association's Distinguished Service Award (see A.J.P.H. 46, 10: 1372, Oct., 1956).

Accidental Falls—the Target

The National Safety Council has set itself the goal of reducing by one-half the injuries and deaths resulting from falls. These are second only to motor vehicle accidents in number of fatalities. In industrial operations alone it is reported that nearly half a million persons are temporarily or permanently disabled annually by falls.

In its campaign the council will make available posters, banners, films, flip charts, illustrated booklets, five-minute safety talks, and safety instruction cards on falls to companies and governmental agencies. Certificate of achievement will be awarded to each plant achieving a 50 per cent reduction in falls or having no injuries from falls during the campaign year.

A booklet, "Falls Aren't Funny," and a brochure listing the campaign materials are available from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

At the same time comes word of a project being carried on by the Home Accident Prevention Unit of the Maryland State Health Department. Here 150,000 copies of a brochure, "What Do You Fall For," warning the public of the danger and helping to create safe attitudes are being distributed. The Baltimore Transit Company has placed 50,000 in the "take one" racks of the buses, the Laundry Association is inserting them in 50,000 customers' laundry bundles, the state's home accident unit is distributing 25,000 throughout the counties, and 25,000 are being provided the clinics of the Baltimore Health Department.

A Labor Organization Principle

At a recent meeting the Health and Advisory Welfare Council to the AFL-CIO Community Services Committee adopted the following policy statement in relation to the conduct and financing of health and welfare services:

"Organized labor is opposed to any restriction in the provision of health and welfare services on the basis of race, creed or color.

"Specifically, pressures to restrict inclusion of agencies from Chests and Funds because of issues of race, creed and color are inconsistent with the principles above enunciated.

"Cooperative effort by management, labor, professional, and civic leadership should be mobilized to insure the provision of services in accordance with these principles."

The Council relates this statement to the Judaeo-Christian tradition and the moral principles underlying American society.

Three-in-One

A pilot project to determine the feasibility of combining diabetes, tuberculosis, and syphilis detection programs has recently been carried out by the Akron (Ohio) Health Department. The County Tuberculosis Association had been conducting chest x-ray services for a number of years while the State Health Department had more recently promoted community blood testing projects for the detection of syphilis.

The pilot survey was conducted among the employees of two business firms using the tuberculosis society's x-ray bus and a trailer with laboratory facilities and a Clinitron for blood sugar testing. Of 2,835 employees x-rayed, 44 were recalled for a larger film; 16 had newly discovered heart or chest findings. Two per cent of 2,400 employees who had blood tests were found positive for syphilis and about three per cent were designated for follow up. Among these, seven new diabetics, five previously known, and three "potential" diabetics were found.

The sponsoring groups, the State Health Department, the Tuberculosis Association, and the American Social Hygiene Association concluded that "such a three-way detection project is feasible, acceptable to the participants, administratively easy to arrange, and comparatively inexpensive to perform. Although the number of cases detected by each type of test might not justify an individual survey . . . the yield from a survey combining all three tests, without a great increase in cost, might be significant enough for general application."

Public Health Influences Demography

Planned Parenthood Federation announces that it has a supply of copies "Public Health as a Demographic Influence," a scholarly discussion of population problems and pubilc health. Its authors are Drs. John E. Gordon, John B. Wyon, and Theodore H. Ingalls of the Department of Epidemiology, Harvard School of Public Health. The article appeared in the Preventive Medicine and Epidemiology Section of the American Journal of the Medical Sciences for March, 1954. Since it has been in demand from professors of preventive medicine for students, Planned Parenthood is offering it at cost. Planned Parenthood Federation of America, 501 Madison Ave., New York 22, N. Y.; 25 cents.

Labor Endorses Fluoridation

A resolution supporting fluoridation was passed at the founding convention of the merged AFL-CIO in December, 1955. The president of the union, George Meany, and the president of the United Automobile Workers, each are members of the Committee to Protect Our Children's Teeth, recently organized in New York City to spearhead a campaign for fluoride treatment of the city's water supply.

American Board of Nutrition Exams

The American Board of Nutrition will hold the next examinations for certification as a Specialist in Human Nutrition, in April, 1957, at Chicago. The final date for receiving applications for these examinations is March 1, 1957. Application forms and further information from the Secretary, Otto A. Bessey, Environmental Protection Research Division, Quartermaster Research and Development Center, Natick, Mass.

Arkansas Academy of Pediatrics

The Arkansas Chapter of the American Academy of Pediatrics was organized in September, 1956, at Little Rock. The officers elected were as follows:

Chairman—Vida Gordon, M.D., M.P.H., assistant professor of pediatrics, Arkansas Medical School, Little Rock

Secretary-Treasurer—Johan W. Eliot, M.D., pediatric consultant, Maternal and Child Health Division, State Board of Health, Little Rock.

Council on Youth Fitness

On July 16 President Eisenhower issued an executive order creating a Council on Youth Fitness, together with a Citizens Advisory Committee on the

Fitness of American Youth. The Youth Council is composed of five cabinet officers and the vice-president who is chairman. The others are the attorney general and the secretaries of agriculture; interior; labor; and health, education, and welfare.

The stated purpose of the Council is to "promote the efficacy of existing programs and the launching of additional programs which will enhance the fitness of American youth. The Council shall seek to coordinate, stimulate, and improve the functions of federal agencies with respect to the fitness of youth." The members of the Citizens Advisory Committee are to be selected by the President and serve at his pleasure. The Council and the Advisory Committee are to meet together at least once a year.

"Grand Rounds" Series

"Grand Rounds" is a series of live closed-circuit telecasts being supported by the Upjohn Company. The third in the series on October 17 was a 90-minute program on "The Borderlines of Cancer" originating in the wards and operating rooms of the Tufts University School of Medicine and the New England Medical Center in Boston. Seven guest clinicians took part in the presentation from as many medical schools from Boston to San Francisco.

The time and place of the remaining telecasts in this series as they are scheduled in various cities throughout the country are being widely publicized. County medical societies will everywhere have information as to the exact time and place of the telecast in each city.

Health Department Administrator

The Philadelphia Department of Public Health has recently created the post of Administrative Services Director designed to provide the health commissioner with a staff officer responsible for administrative planning, operations, and analysis. The post includes responsibility for setting up effective operating budget and accounting systems, development of standards for performance, and counseling on administrative policies and solution of management problems.

The position is necessitated, it is reported, by the complexity of the city's Health Department in Philadelphia, which embraces, in addition to the public health services, a Division of the Medical Examiner and the Philadelphia General Hospital. A master's degree in administration with seven years of responsible professional management experience, including three years at the executive level, are among the qualifications set up for the job.

PERSONALS

M. S. ACKER, M.D.,† director, Research and Statistics Branch, Department of Public Health, Province of Saskatchewan, is on a two-year leave to become medical consultant for WHO on a project to revise hospital record systems and establish a training program for hospital records officers for the governments of Singapore and the Federated States of Malaya.

GORDON W. ALLEN,† former director, Delaware County District Office, Philadelphia Health and Welfare Council, is now health consultant, United Community Funds and Councils, New York City.

WENDELL R. AMES, M.D.,* former first deputy commissioner, Buffalo-Erie County (N.Y.) Health Department, has been appointed health officer of Rochester to succeed the late ALBERT D. KAISER, M.D.*

ROBERT J. ANDERSON, M.D.,† former assistant chief, Division of Special Health Services, Public Health Service, has been named chief of the Service's Communicable Disease Center, Atlanta, Ga.

VIRGINIA ARNOLD, R.N., M.S.,† former chief nurse, Division of International Health, Public Health Service, is now assistant director for medical education and public health, Rockefeller Foundation, New York City.

HUGH M. AVERILL, D.D.S.,† formerly on active

* Fellow.
† Member.

duty with the U. S. Naval Reserve, is director of dental health education and hygiene, Rochester (N.Y.) Health Department, where the dental health program originates in the Eastman Dental Dispensary.

CHARLES F. BLANKENSHIP, M.D.,* former medical director, Kansas City Regional Office, Public Health Service, has succeeded RICHARD F. BOYD, M.D.,* as medical director, San Francisco (Calif.) Regional Office.

RICHARD F. BOYD, M.D.,* former medical director, San Francisco Regional Office, Public Health Service, has succeeded A. L. CHAPMAN, M.D.,* as medical director, New York City Regional Office.

A. F. BRANTON, JR., former rehabilitation consultant, Health and Welfare Council, Philadelphia, is now secretary, Health Division, New Haven Council of Social Agencies, Conn.

I. JAY BRIGHTMAN, M.D.,* who has served as assistant commissioner for welfare medical services in the New York State Department of Health, Albany, since 1952, has been appointed executive director, New York State Interdepartmental Health Resources Board authorized by the 1956 Legislature.

MADISON B. BROWN, M.D.,† former executive vice-president and medical director, Hahnemann Medical College and Hospital, Philadephia, has been appointed to the newly created position of director of administrative services, American Hospital Association, Chicago, Ill.

CHARLES S. CAMERON, M.D., former medical and scientific director of the American Cancer Society, has been appointed dean, Hahnemann Medical College, Philadelphia, Pa.

MARY RITA CASSITY, R.N., former staff nurse, Washington County (Mich.) Health Department, is now supervisor of public health nurses, Cheyenne-Laramie County (Wyo.) Health Department.

A. L. CHAPMAN, M.D.,* former medical director, New York City Regional Office, Public Health Service, has been appointed chief, Division of Special Health Services, in the Washington, D. C., Office of the Service.

WALTER O. CROMWELL,† former executive secretary, Health Council, Council of Social Agencies, Kansas City, Mo., is now health division secretary, United Community Services, Washington, D. C.

WARD DARLEY, M.D., president, University of Colorado, has accepted the newly created position of executive director, Association of American Medical Colleges, taking office in Chicago, Ill., at the first of 1957.

SCOTT W. EDMONDS, senior sanitarian, Umatilla County (Ore.) Health Department, has been awarded the 1956 General Fred A. Safay Memorial Scholarship of $1,500 of the National Association of Sanitarians for advanced study of environmental sanitation.

MILDRED ELSON has resigned as executive director, American Physical Therapy Association, New York City, and has been succeeded by MARY E. HASKELL, former associate executive director, who has in turn been succeeded by LUCY BLAIR,† former consultant.

EDWARD LEE FLEMMING, JR., M.D., former director, Duval County Child Guidance and Speech Correction Clinic, has been appointed consultant in child growth and development, Bureau of Maternal and Child Health, Florida State Board of Health, Jacksonville.

DAVID FROST, M.D.,* former Alameda City health officer, has been appointed director, California State Alcoholic Rehabilitation Commission.

WILLIAM C. GIBSON,* associate professor, public health engineering, and secretary of the faculty, has been promoted to a full professorship in the School of Public Health, University of Michigan, Ann Arbor.

MARGARET GIFFIN, R.N., former assistant director, Department of Hospital Nursing, National League for Nursing, has become director, succeeding MARIAN ALFORD, R.N., resigned to become executive director, California Nurses' Association.

ESTHER GILLETTE, physical therapist consultant, Wyoming Department of Public Health, has resigned to return to Ft. Collins, Colo., to become physical therapist, Larimer County Hospital in the office of a practicing physician.

DEE HAWKE, former executive secretary, Warren County (Ohio) Tuberculosis and Health Association, is now field consultant, Ohio Tuberculosis Association, Columbus.

CECILE HILLYER,* former program planning consultant, Division of Medical Services and Facilities, has been named chief, Division of Training, U. S. Office of Vocational Rehabilitation, Washington, D. C.

EMIL C. JENSEN,* chief, Division of Engineering and Sanitation, Washington State Department of Health, Seattle, has been elected vice-president, Federation of Sewage and Industrial Wastes Associations.

GEORGE M. LEIBY, M.D., M.P.H.,* director of professional services, Veterans Administration Hospital in New York City, has been appointed manager of the VA Research Hospital in Chicago, Ill.

HAROLD J. MAGNUSON, M.D.,* former chief

* Fellow.
† Member.

of operational research for the venereal disease program, Public Health Service, Washington, D. C., has been appointed, chief of the occupational health program.

COLONEL RICHARD P. MASON, MC,† former chief, Research and Development Division, Office of the Army Surgeon General, has been named Commandant of Walter Reed Army Institute of Research, Washington, D. C., succeeding BRIGADIER GENERAL JOHN R. WOOD, MC, USA (Rtd.).

RUSSELL C. MCCAUGHAN, D.O., executive secretary, American Osteopathic Association, Chicago, Ill., has retired, and has been succeeded by TRUE B. EVELETH, D.O., assistant executive secretary.

MARY ANN MCINTYRE, R.N., former nursing supervisor, Heart Hospital, University of Minnesota, Minneapolis, has been named coordinator of the Training Program for Nurses in Cardiovascular Disease to be given at the University during the winter quarter of 1957.

SEWARD E. MILLER, M.D.,* former chief, Division of Industrial Hygiene, Public Health Service, is now medical director, Institute of Industrial Health, University of Michigan, Ann Arbor. He succeeds OTTO T. MALLERY, M.D.,* who has returned to his former position as professor of internal medicine in the School of Medicine.

WILLIAM E. MOSHER, M.D.,* former deputy commissioner in charge of maternal and child health services, Buffalo-Erie County (N.Y.) Health Department, has succeeded WENDELL R. AMES, M.D.,* as first deputy commissioner.

RALPH S. MUCKENFUSS, M.D.,* former scientific director, Naval Biological Laboratory, Naval Supply Center, Oakland, Calif., has been appointed technical director, Naval Medical Research Institute, Washington, D. C.

JAY V. NASH, Ph.D., who retired in 1953 as chairman, Department of Health, Physical Education, and Recreation, New York University, has been appointed executive secretary, New York State Association for Health, Physical Education, and Recreation, and will serve as a staff member of the State Committee on Tuberculosis and Public Health, New York City.

ELIZABETH NELSON, R.N., former public health nurse, Weld County (Colo.) Health Department, has been appointed public health nurse, Platte County, Wyo.

MELVIN P. REID, Ph.D., former director, Escambia County Child Guidance Clinic, has been appointed chief psychologist consultant, Bureau of Mental Health, Florida State Board of Health, Jacksonville.

WILLIAM J. REIN, M.D., otolaryngologist of New Orleans, has been appointed state health officer and president of the Louisiana State Board of Health, succeeding S. J. PHILLIPS, M.D.*

PAUL W. SCHUSTER,* former health education consultant, Northeast District Office, Ohio State Health Department, is now executive director of Region VII, American Heart Association, made up of seven counties in the Champaign-Urbana area of Illinois with headquarters in Urbana.

ELENA M. SLIEPCEVICH, D.P.E.,* former director and professor of health education, Springfield College, Mass., is now professor of health education and coordinator of health education, Women's Division of Physical Education, Ohio State University, Columbus.

MAJOR EUGENE E. TAYLOR, MC, USAR,† former director, Communicable and Chronic Disease Control, Louisville-Jefferson County Board of Health, is now chief, Departments of Health Practices and Environmental Medicine, Walter Reed Army Institute of Research, Washington, D. C.

G. CULLEN THOMAS,† retired vice-president, General Mills, Inc., of Minneapolis, Minn., has been appointed a special consultant, U. S. Food and Drug Administration.

UNA V. WETHERBY, R.N.,† is consultant in rehabilitation, Public Health Nursing Section, Massachusetts Department of Health, Boston.

WILLIAM R. WILLARD, M.D., Dr.P.H.,* dean of the Upstate Medical Center, State University of New York, Syracuse, has resigned to become dean of the Medical School and vice-president of the Medical Center, University of Kentucky, Lexington.

DON G. WILLEMS, former technical service engineer with Infilco, Inc., Tucson, Ariz., is now a public health engineer, Division of Environmental Sanitation, Montana State Board of Health, Helena.

THOMAS L. WILLMON, M.D., former executive officer of the U. S. Navy's Medical Research Laboratory, Bethesda, has been appointed director, Medical and Scientific Department, National Multiple Sclerosis Society, New York City, succeeding FREDERICK L. STONE, M.D., who is returning to the Public Health Service as principal technical analyst and staff adviser for USPHS extramural research and training programs.

WARREN WINKELSTEIN, JR., M.D.,† former director, Bureau of Communicable Disease Control, Buffalo-Erie County (N.Y.) Health Department, is on a National Heart Institute fellowship to do research at the Roswell Park Institute in Buffalo.

DEATHS

A. J. CARLSON, Ph.D., M.D., LL.D.,† professor emeritus of physiology, Department of Physiology, University of Chicago, Chicago, Ill., on September 2 (Food and Nutrition Section).

BENJAMIN M. DUGGAR, Ph.D., LL.D.,† discoverer of Aureomycin and consultant in mycological research and production and independent research, Lederle Laboratories, Division of American Cyanamid Company, Pearl River, N. Y. (Laboratory Section).

ANNA K. EATON, D.Sc.,† director of laboratories, Abbotts Dairies, Philadelphia, Pa. (Maternal and Child Health Section).

GUSTAF A. HEDBERG, M.D., superintendent and medical director of Nopeming (Minn.) Sanatorium, on March 27 at the age of 49 (Epidemiology Section).

NATHAN B. JACOBS,† president and chief engineer, Morris Knowles, Inc., Pittsburgh, Pa. (Engineering Section).

MARK LINDQUIST,† city health officer, Modesto, Calif. (Health Officers Section).

WILLIAM SIEGAL, M.D.,† recently retired as director, Bureau of Tuberculosis Case Findings, New York State Department of Health (Occupational Health Section).

ANTONY TRIOLO, M.D., M.P.H.,† formerly director, City-County Health Department, Eugene, Ore. (Maternal and Child Health Section).

CONFERENCES AND DATES

American Public Health Association, 84th Annual Meeting, Atlantic City, N. J. Headquarters: Convention Hall, Atlantic City, N. J., November 12–16.

State and Regional Public Health Meetings:

California, Southern, Public Health Association. Los Angeles Area. November 30.

Mississippi Public Health Association. Jackson, Miss. December 5–7.

Oklahoma Public Health Association. Stillwater, Okla. January 9–11, 1957.

Public Health Association of New York City. Donnell Library, Center of New York Library. New York, N. Y. December 5.

Tennessee Public Health Association. Nashville, Tenn. December 5–7.

Meetings of Other Organizations Coming in November, December, 1956, and January, 1957:

Air Pollution Control Association. (Semi-annual meeting). Rice Hotel, Houston, Tex. December 3–5.

American Association for the Advancement of Science. New York, N. Y. December 26–31.

Association of American Medical Colleges. Colorado Springs, Colo. November 12–14.

Association of Military Surgeons of the United States. Washington, D. C. November 12–14.

Association of State and Territorial Health Officers. Washington Hotel. Washington, D. C. November 4–10.

Council on Social Work Education. Los Angeles, Calif. January 23–26, 1957.

Family Service Association of America. Cincinnati, Ohio. November 14–17.

National Association for Mental Health. Washington, D. C. November 29–December 1.

National Social Welfare Assembly. New York, N. Y. December 11–12.

United Cerebral Palsy. Carter Hotel, Cleveland, Ohio. November 9–11.

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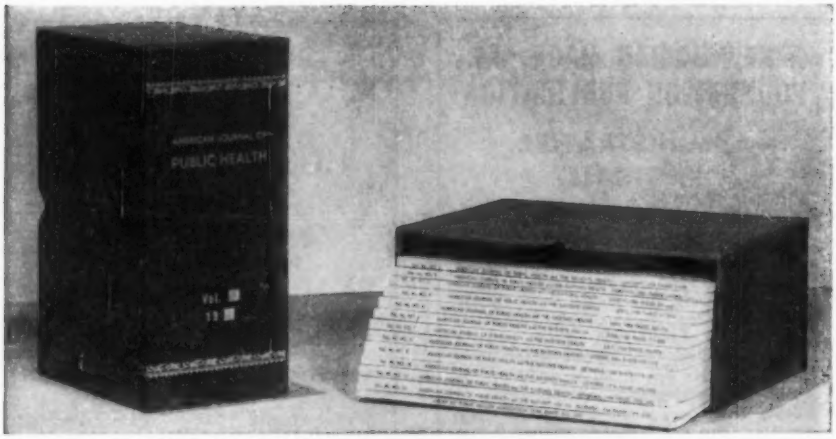

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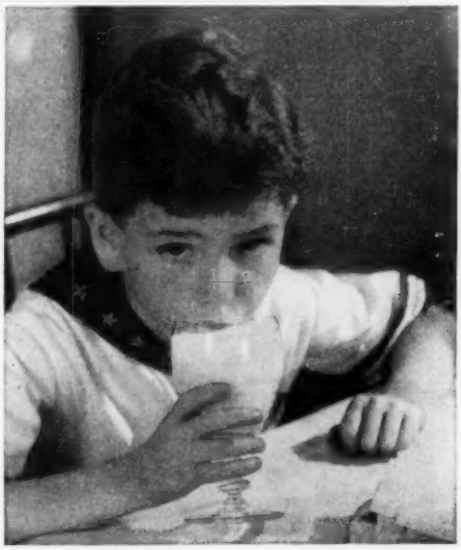

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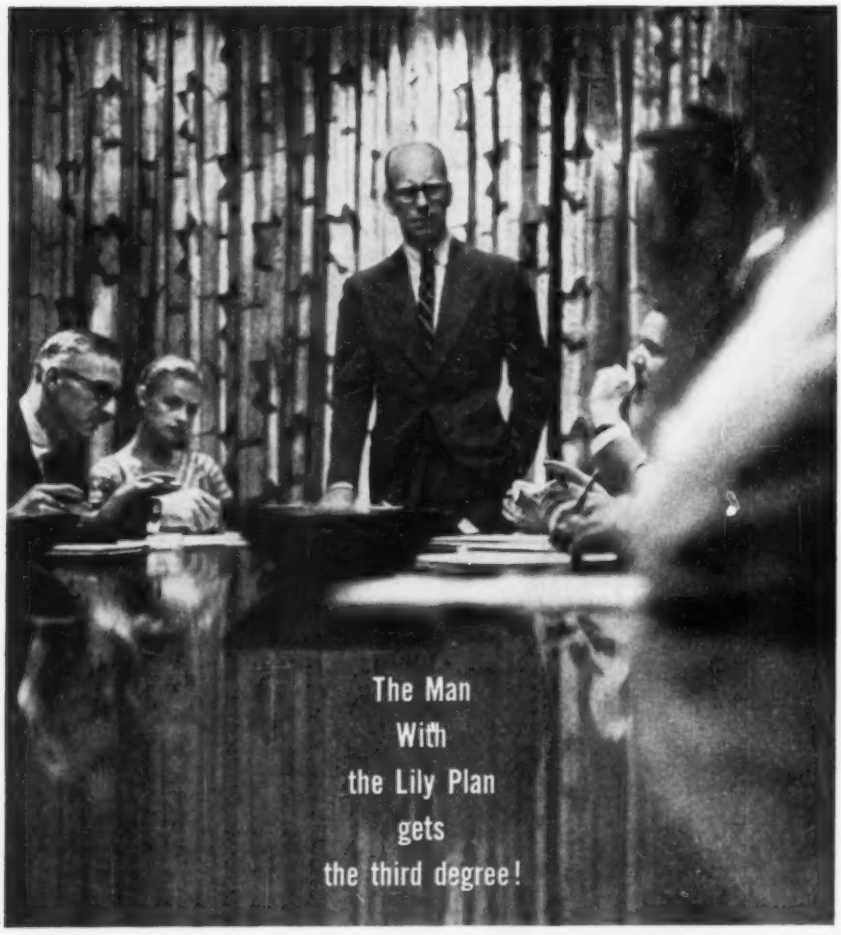

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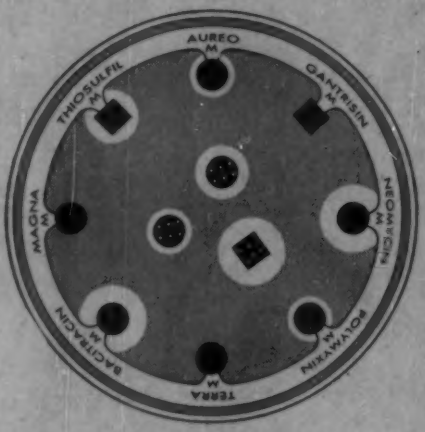

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